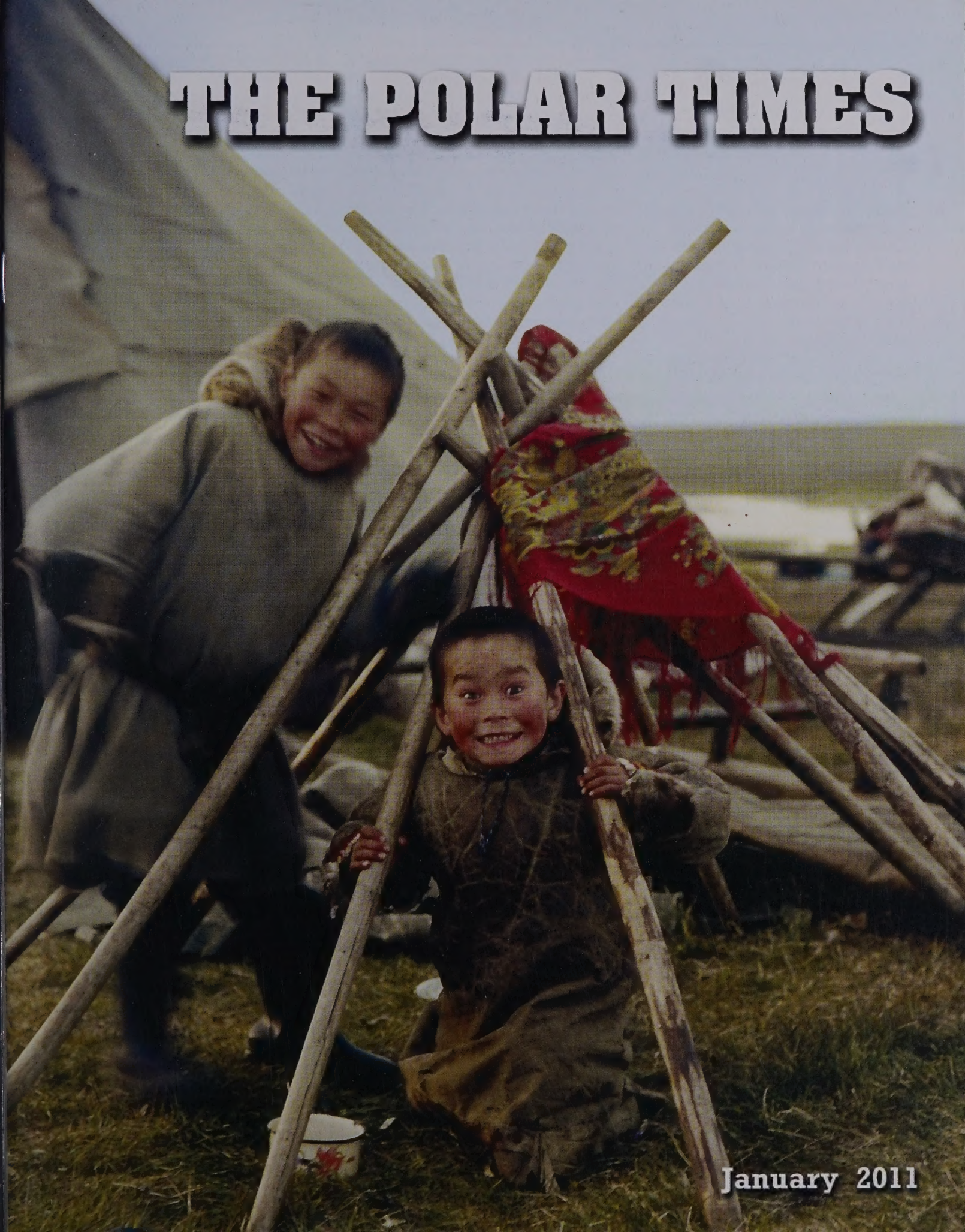
THE POLAR TIMES



January 2011

President's Message

Fellow members of the American Polar Society (APS), my sincere thanks for choosing me as your new president. I assume this responsibility knowing that I follow in the footsteps of a long line of distinguished Antarctic and Arctic explorers that goes back some 75 years to APS's founder, the visionary August Howard. I want as well to express the Society's special thanks to John Behrendt, APS's past president, for his unstinting efforts on our behalf these past four years.

I step into the job with a special purpose and mission. That will be to not only work, with your assistance, to strengthen the APS and increase our numbers, but also to increase our visibility and relevance worldwide. These goals are particularly important because within our ranks there resides significant expertise in all aspects of Arctic and Antarctic exploration, field science and political policy. Such expertise is vitally needed now by government and local community leaders in the Americas and worldwide. They are already increasingly forced to address the myriad problems posed by an accelerating global warming. Foremost among these are attendant dramatic changes in the atmosphere, oceans and landmasses of our world and the implications that these hold for the future well-being of all the world's inhabitants.

In the months ahead, you will see an increased presence by the APS in the media and on such communication channels as a vastly improved APS website, Facebook and LinkedIn. You will also learn more about your fellow members and their achievements and expertise in *The Polar Times* and about our exciting plans and preparations in progress for the APS's 75th Annual Meeting and Symposium, scheduled for the Fall of 2011.

I look forward to meeting each of you and to working with you on behalf of our American Polar Society.

Please do not hesitate to contact me, or any of APS's officers with your ideas and constructive suggestions at any time. You will find us most responsive! ❑

Alfred McLaren
President, APS

Transition and Transformation

"Transition" and "transformation" — these two weighty words currently in vogue are most often used — or overused — to suggest change on a grand scale, primarily in the national and international arenas. Yet, even here in our small community of polar explorers, scientists and enthusiasts, transition and transformation rule the day: the former reflected in the change of leadership of the American Polar Society and the latter a certainty, given the formidable challenges the organization and its new governing body face as the second decade of the 21st Century begins.

As to transition, we start by offering hail and farewell to our past president, John Behrendt, who served in this role for close to four years. John presided during a period when trend lines in economics, technology and demographics all pointed in directions detrimental to the comfortable existence that so many small esoteric and non-profit organizations like APS have enjoyed for decades.

Over time, rising costs — primarily for publication and distribution of *The Polar Times* — eroded our surplus funds, and John had to make the unhappy decision to raise membership dues, mindful of the risk that some members might resign as a consequence. Not a popular decision but certainly a necessary one. We thank him for that.

Technology and demographics are intertwined in the sense that our membership is aging, and potential new and younger members are more and more oriented to the Internet and away from hard-copy publications such as *The Polar Times*. John has been a staunch supporter of *The Polar Times* and has firmly rejected any suggestion of reducing the quality of our magazine as a means of achieving cost reduction. We thank him for that.

Our last American Polar Society Symposium of May 2010 was a success, and all credit to John for making it so. Here again, formidable financial constraints compelled him to seek assistance from outside sources and, in doing so, he demonstrated that patrons or angels are out there and can be called upon to support our organization. Again, we thank John for opening this door.

One of the strengths of our Society is that, by and large, the leaders don't go away. They step aside and then stand ready to help their successors and the organization in any way they can. We can be certain that John Behrendt will be standing by to assist his successor, Alfred S. McLaren and the American Polar Society. We thank him in advance for that.

As to transformation, we hail and welcome our new president, Alfred S. McLaren, and our new vice president, Rob Flint. Their CVs were distributed to all members as part of the election process, so we need not dwell on the specifics of their impressive credentials but, rather, we should take a moment to relish our good fortune in having two such talented and experienced individuals at the helm, especially in the challenging times ahead.

Already we have seen the energy, wisdom and experience they will employ as they address the issues their predecessor confronted — not only the financial challenges, but, in a larger sense, the redefining of the organization, its mission and purpose.

We wish them the best and ask that you raise your hand when they call for help. The future of APS depends on all of us. ❑ **Cliff Bekkedahl**

American Polar Society

The American Polar Society was founded Nov. 29, 1934, to band together all persons interested in polar exploration. Regular membership dues are $25 a year ($35, foreign) and entitle members to receive ***The Polar Times*** twice a year. The American Polar Society is classified as a tax exempt organization under Sec 501(C)3 of the IRS Code. For more information about the American Polar Society, contact Kevin L. Bjella, ***APS Secretary***, at 1.802.295.6881 or send email to kevin.bjella@erdc.usace.army.mil.

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About Our Front Cover

Nenets boys posing inside their "play" choom. ❑ Photo credit: Bill Gasperini – July 2000

Baby Lyuba – The Ambassador of the Nenets

by Moki Kokoris and Bill Gasperini

PHOTO CREDIT: BILL GASPERINI – JULY 2000

Nenets summer camp.

The wind was blowing hard across the vast Russian tundra where reindeer herder Yuri Khudy and his sons discovered a carcass near a bank of the Yuribey River. Although they routinely came across the curved tusks of mammoths in summer months, the Khudys had never before seen a complete animal. Yet after spotting the trunk protruding from its head, they quickly realized what lay on the sandbar at their feet. Yuri had heard stories about these beasts retold in the lodges during gatherings on long winter nights. Nenets elders still believe that mammoths are creatures that wander the spirit underworld, herded by malevolent gods, and that touching them brings bad luck.

Whenever found, mammoth remains are often sold to fossil dealers and ivory traders before scientists can examine them, but understanding that this was a unique and significant discovery, Yuri went to great lengths to bring his find to the attention of proper authorities. For his efforts, the baby mammoth was named after Yuri's wife, Lyuba (Love).

Since the botanist Mikhail Adams recovered the first woolly mammoth carcass in Siberia in 1806, a dozen or so other specimens have been found, including several calves. Yet no carcass of any age was as perfectly intact as that of little Lyuba. Her body was collected, packed and shipped by helicopter to the Shemanovsky Museum in Salekhard, the regional capital. Alexei Tikhonov, director of the St. Petersburg Zoological Museum, was one of the first scientists to view the female baby. Tikhonov invited Dan Fisher, a paleontologist from the University of Michigan, who had spent 30 years studying Pleistocene mammoths and mastodons, to assist in the forensic studies that would shed more light on this extinct species and hopefully unravel the mystery of Lyuba's superb state of preservation. CT scans, showing brilliant blue vivianite crystals growing inside her cavity, and DNA testing revealed that the baby mammoth had been literally pickled by lactic acid produced by microbes in the heavily silted pond where, at only one month old, she met her demise.

Since the botanist Mikhail Adams recovered the first woolly mammoth carcass in Siberia in 1806, a dozen or so other specimens have been found, including several calves. Yet no carcass of any age was as perfectly intact as that of little Lyuba.

PHOTO CREDIT: BILL GASPERINI – NOVEMBER 2010

Lyuba, the baby mammoth on exhibit at the Liberty Science Center in NJ.

Baby Lyuba, who was featured in National Geographic magazine and a television documentary, is currently the star attraction in the major exhibition: "Mammoths & Mastodons: Titans of the Ice Age," which will be touring the United States for the next four years. The displays not only explore the implications of changing ecosystems of territories the mammoths once roamed, but also focus on the Nenets people of the region where Lyuba had been found.

The Nenets are the largest of approximately a dozen indigenous tribes who herd reindeer year-round across the Russian Arctic. Anthropologically, the Nenets are representatives of the Uralic race with stronger than average Mongolian characteristics. Of the 40,000 Nenets living within Russian Federation borders, approximately one third is nomadic. Their native territory is the tundra and the forest taiga – a land of permafrost, numerous rivers and wide marshy stretches. Since ancient times, the migratory cycle of the Nenets has been tied to that of the reindeer as they travel vast distances up and down the Yamal peninsula, moving from northern pastures in summer to the more protected sub-Arctic regions in winter. There are approximately 700,000 reindeer spread over 48 million hectares of land in the region (this in-

CONTINUED ON PAGE 4

Photo credit: Bill Gasperini – 1998

Nenets women preparing to drape reindeer pelts over choom frames.

Continued from page 3

cludes the entire Yamal-Nenets Autonomous Okrug, of which the Yamal peninsula is just one part).

Like many other indigenous Arctic cultures, Nenets traditional beliefs stress respect for the land and its resources, and the reindeer provide almost everything needed to survive the harsh conditions. Their tipi-like dwellings, or "chooms," are made of reindeer pelts that are draped over wood frames. The center of life, the choom is as much a place of storytelling, food preparation, eating and sleeping, as it is the beginning and end of all journeys. The chooms are women's domain, while outside on the tundra, men are in charge.

Reindeer pull the rugged winter sleds, onto which the dismantled chooms and other belongings are loaded every few days. Summer sleds are much lighter. During their annual migration cycle, some Nenets travel an average of 1500 miles across the aptly-named Yamal ("back of the beyond") peninsula that lies north of the Ural mountains.

In warmer months, the deer graze on protein-laden tundra grasses, while in winter, the animals must dig under the snow to find carbohydrate-rich mosses and lichen. Reindeer hides are also used to make the bulky parkas and leggings that allow the Nenets to endure temperatures that reach minus 50°F.

Although the herders use some outside items such as tea cups, radios, rubber boots and ponchos, most everything else is made by hand: the women make the fur clothing while the men build the sleds and tools such as cross-bow wooden drills and reindeer-leather lassos with which they capture individual deer when needed. The Nenets' diet consists predominantly of deer meat, but is supplemented with fish, tea, jam, and bread that is obtained on the rare occasion they travel past towns or settlements.

Many Arctic experts consider the Nenets' lifestyle to be one of the most traditional in the world, largely the result of isolation out on the tundra. To an outsider, a Nenets camp might appear very similar to a 19th century Native American camp on the American plains. Yet the nomadic Nenets are fully aware of the

Caring for a 42,000-Year-Old "Baby"

The "Mammoths and Mastadons: Titans of the Ice Age" exhibit will be traveling across the United States over the next four years, but for part of the tour, a fiberglass replica of Lyuba will be on display while the real Lyuba makes appearances in Russia during special events. With oversight by a Shemanovsky Museum staff member, a highly specialized team from Chicago's Field Museum has been charged with moving the baby mammoth. After each "deinstall," Lyuba is carefully checked by a conservationist for signs of deterioration or changes in her condition.

Because the young mammoth was preserved using a special drying technique, she does not need to be kept frozen nor does she require an otherwise specialized case. Since the drying process continues even while she is on display, any slight shifting in her legs must be carefully measured (see photo) so that the custom-made metal mounts keep her stable in the trotting position in which she was found. Her pose, along with her excellent state of preservation, makes it seem conceivable that this ancient "baby" could suddenly spring back to life and walk right out of her case.

The real Lyuba is scheduled to spend most of 2011 on view in Anchorage and St. Louis. For exhibition highlights and more information: http://www.fieldmuseum.org/mammoths/ ❑

Photo credit: Bill Gasperini – November 2010

outside world, particularly because all Nenets men are required to serve two years in the Russian military.

While visitors may assume that such a rigorous and austere existence might drive the Nenets into towns to seek a more conventional lifestyle, the majority will say that "the tundra is our home," and that they wouldn't want it any other way. Conversely, the Nenets often ask outsiders why it is considered normal to live out of touch with the natural world, dependent on a money-based system, which they believe leads to social ills.

Some Nenets have indeed tried town life. Sasha Serotetta has been there and back. "I went to teach in Tyumen (the capital of a region to the south) for four years, and could see that life certainly has its comforts," he says, "but soon I tired of being inside all the time, like living in little boxes. Out here we are totally free and living with nature."

Given that Yamal lies on one of the largest natural gas deposits in the world, the Nenets face challenging times as they cope with inevitable industrial development that threatens their very existence. While trying to believe the promises from Russia's gas monopoly, Gazprom, that their distinct lifestyle will be preserved, these hardy people continue to trundle their belongings across the landscape in one of the harshest environments in the world, living in a way that completely sets them apart from "that other world."

Photo credit: Bill Gasperini – November 2010

Baby Lyuba after removal from display case. The brilliant blue crystals of vivianite were likely formed as a result of phosphate leaching out of her bones.

Little Lyuba has unsuspectingly become a truly unique ambassador for the indigenous Nenets as she travels around the world, telling both her own story as well as that of the people who still live where she had died 42,000 years ago. If all are lucky, baby Lyuba may very well be a harbinger of good fortune. ❑

Little Lyuba has unsuspectingly become a truly unique ambassador for the indigenous Nenets as she travels around the world, telling both her own story as well as that of the people who still live where she had died 42,000 years ago.

Illustration by Mori Kokoris

Photo credit: Bill Gasperini – 1998

Nenets herder capturing reindeer.

Photo credit: Bill Gasperini – July 2000

Choom frame structures prior to being covered with reindeer skins.

To an outsider, a Nenets camp might appear very similar to a 19th century Native American camp on the American plains. Yet the nomadic Nenets are fully aware of the outside world, particularly because all Nenets men are required to serve two years in the Russian military.

Kayaking the Glaciers of Alaska

by W. Scott Hoffman

When it arrived, the tidal wave was subtle at first. The ocean surrounding our kayaks fell and pulled away, leaving us teetering and struggling for balance on suddenly exposed boulders. The wave came soon after. It was more of a massive surge than a breaking wave, and it lifted our boats off the rocks and pushed us several meters onto shore. The waves lapped against our camp, more than a hundred meters from the high tide line, leaving our gear and supplies a little wet but undamaged . Within a few minutes, house sized blocks of ice choked the small inlet we were paddling through. It was obvious that what caused the sudden and nearly disastrous swell was not one of the frequent and strong earthquakes that often shake the panhandle of Alaska, but a massive calving of ice from one of Glacier Bay's many tidewater glaciers, continuing the great meltdown and retreat of the ice fields that began hundreds of years ago in that area.

We were a group of five paddlers making a twelve-day trip through the northern channels and fjords of Glacier Bay, a trip of nearly two hundred kilometers, and passing through some of the most spectacular scenery in North America. The route took us past several tidewater glaciers, great carpets of ice —some over 75 meters high — spilling ice and boulders into the ocean as they slowly slide forward, pushed by gravity from the high snowfields that gave birth to them many kilometers away. Our trip included well-traveled waters — where we sometimes shared part of the day with cruise ships and tour boats — as well as isolated backwaters and estuaries closed to motorized travel and seldom visited.

Glacier Bay sits at the northern end of the Alaskan panhandle. An evolving realm, the bay was nothing more than a small indentation in a compact sheet of ice when the HMS *Discovery*, captained by George Vancouver, passed by in 1794.

Photo by Scott Hoffman

Flying into Glacier Bay, a glacier extends into the high snowfields that created it.

Photo by Scott Hoffman

An iceberg-choked bay, Muir Inlet Glacier Bay

By the time of John Muir's first visit in 1879, the ice had retreated more than 50 kilometers. Today the bay has nearly doubled in length, revealing a fjord-rich topography, spectacular vistas and a graduated spectrum of flora maturing in step with the retreating ice.

Glacier Bay splits into two principle arms 60 kilometers north of its mouth. The eastern arm is named after John Muir. It has grown substantially since he visited it in the late 1800s and first saw a huge tidewater glacier rising nearly 100 meters above the sea and spreading over two kilometers across the inlet that would bear his name. Today the Muir Glacier is barely lapped by the ocean, having receded

Photo by Scott Hoffman

Kayaking in Muir Inlet

another 40 kilometers and onto land, where it is currently a shadow of the great mass of ice seen by Vancouver and Muir in past centuries.

We chose late August to travel through Glacier Bay. The mosquitos and tourists are less plentiful and, though the days are still long, there is enough darkness at night to give us a chance to see the spectacular northern lights that flash with varying intensity in the late summer and through the fall and winter.

It was near the Tarr Inlet that we were nearly capsized by the glacier-born wave and almost trapped by the resulting ice floe that choked the bay. It is important to keep at least a half kilometer away from active glaciers for just this reason. Though large calving events resulting in tidal waves and ice-blocked navigation are relatively rare, it is always important to be vigilant. The few minutes it would have taken to paddle back to camp before the calving deteriorated into a two-hour ordeal as we picked our way through icebergs and narrow, ice-clogged channels to reach camp. Throughout the night, falling ice from the Lamplugh Glacier rang out like cannon fire, echoing through the mountains.

I think, after enduring such a close call, we all slept fitfully that night.

Tides in Alaska can oscillate seven or more vertical meters in 12 hours, and timing this rise and fall of sea level is essential for the kayaker. Paddling with the tides can make all the difference between fighting a fast current of tidal flow and being able to make landfall and camp without having to carry boats and gear a kilometer or more through mud flats and slippery boulders to a point above the high-tide line. The next day, the tides weren't with us, and we spent much of the morning hauling gear and boats over rough, muddy terrain to water's edge.

> *After ... such a close call, we all slept fitfully that night.*

Like the oscillating tides to which we had to adapt during our paddle, the glaciers of Alaska rise and fall over much longer periods of time. Glacier Bay is an example of one of the most rapid glacial retreats in the world. In several locations around the park, interglacial stumps — large remnants of mature spruce forests that flourished thousands of years ago between ice ages — are exposed by the retreating ice, evidence that the movements of the glaciers are not a one-way process. Though the majority of glaciers are retreating at Glacier Bay, several of the glaciers are currently stable or even advancing, fed by the moisture that gathers at high elevations in the form of snow that slowly compresses into glacial ice.

Glacier Bay is bear country, and black bears and grizzlies are abundant in this protected refuge. Seldom did we exit our boats and not see a trail of bear tracks lining the shore. On this trip we paddled beside a grizzly sow and two cubs that were picking through the rocks recently exposed by the tide, searching for mussels and fish abandoned by the retreating waters. The bears hardly noticed our boats as we passed by. Bear encounters are seldom dangerous if some basic rules are obeyed. Keeping a clean camp, properly storing food in bear-proof canisters, and avoiding a sudden bear encounter by good route selection plus using bells to warn the animals of our presence were essential practices to stay safe amongst these great mammals during our 12 days in the wilderness.

Along with bears, Glacier Bay is home to a rich array of wildlife. Mammals, including mountain goat, moose, fox and wolf, are often encountered. Over 200 species of birds live in the park or pass through during summer migration. There are over 200 species of fish swimming in Glacier Bay's waters, including five of Pacific Salmon that clog fresh water streams during spawning season. Several species of whale visit the bay, the most notable being the orca and humpback that are often seen breaching out of otherwise quiet waters and crashing back with an enormous splash.

Probably the most conspicuous member of the Glacier Bay menagerie is the mosquito. Clouds of the blood-sucking pests bloom in the early summer and persist in strength and

Photo by Scott Hoffman

A grizzly sow and two cubs. Photo taken from the kayak

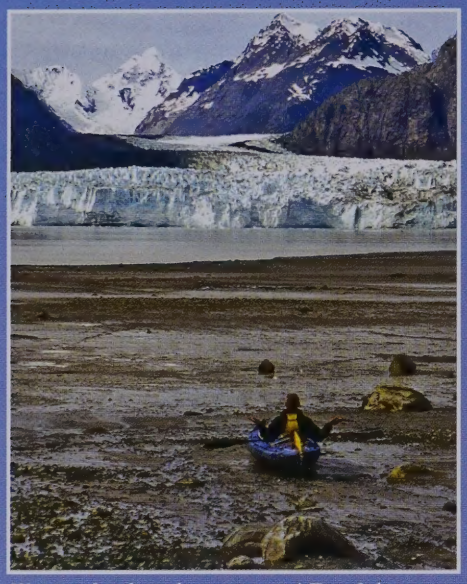

Photo by Scott Hoffman

Waiting for the tide to come in! Tarr Inlet, Glacier Bay

numbers until the first freezes of late August or September. Bug repellent, head nets and long sleeves are a must, even when paddling, as swarms of the tormenting insects can chase boats far out to sea before being dispersed by a strong gust of wind.

That night was cold and star-filled when the skies darkened around 10 p.m. After midnight, a myriad of colors danced above the horizon; the Aurora Borealis — also known as the Northern Lights — was out and filling the sky with shimmering colors.

The next day, head winds picked up, giving rise to large waves that crashed over our bows and pitched our kayaks without mercy as we paddled across an exposed stretch of water.

Not soon enough for our seasick expedition, we arrived at the mouth of a dry channel that fills with water and is navigable only during high tides of plus-five meters or more. The tides were with us that day, and patiently we waited as the rising sea lifted our boats. Water, at first a trickle, began to flood into the muddy slough. In about an hour, a magical channel, just wide enough for our boats, opened up, and we were able to paddle across a two-kilometer peninsula into an immense, flat water estuary far removed from the commercial boating and choppy seas of Glacier Bay's main channel. Wolf and moose tracks were plentiful, as well as clusters of sea birds swollen into huge flocks during the summer migration.

A low-pressure system moved in, and we were exposed to several days of fog and heavy rain. It is always a challenge to stay warm and dry when kayaking. Hypothermic conditions are more the norm during the summer months, so good rain gear, waterproof bags for our tents and sleeping bags were a must. Rubber rain suits are often more practical than Gortex which often is no match for the persistent storms that drench the rain forests of coastal Alaska.

We explored the bays and fjords of the remote estuary for several days. Once, while paddling to find a camp for the night, we heard a sudden, loud hissing sound coming from near one of the many islands that dot the inlet. We stopped paddling and waited to hear the noise again, to pinpoint its location. After a couple of minutes, we heard it again. This time it was followed a short while later by a quieter, puffing sound. We were then able to pinpoint the source of the sound, about a kilometer away. It was the spouting of a humpback whale, with a young calf at its side. The small whale and its mother were taking advantage of the quiet waters of the estuary to feed and spend part of the summer after their two-month trek from the Hawaiian Islands. We continued paddling and were treated to an awe-inspiring display of synchronized swimming and spouting by the two whales that went on into the night, well after we made camp and settled into our tents beneath the pattering rain.

In the summer, the weather in this area is generally mild, but seldom does a week go by without at least one significant penultimate spell of foul weather, so travelers need to be prepared for rain. Summer is the best time to visit Glacier Bay, and though cruise ships offer a luxurious and insulated way of seeing the spectacular vistas of the park, taking an extended journey of several days through its waters via kayak offers an experience the travelers on tour boats can only dream of. Despite the necessary preparations for self-sufficient travel and camping in the sometimes harsh environment of coastal Alaska, Glacier Bay is an ideal place to set out in self-powered watercraft, with charter boats and sea taxis available to transport paddlers up-bay to areas where the great glaciers and mountain vistas are more accessible. Boat rentals are also available for anyone flying into the area and wishing to rough it for a few days in the Alaskan wilderness.

Nearing the end of our trip, we used our GPS to navigate to our pickup spot several miles from "Whale Island," as we'd come to call it. A little late, but a welcomed sight after close to two weeks on the water, our sea-taxi tour boat appeared through the thick, low cloud cover and beached at our prearranged location. We loaded our boats and gear onto the small ship, happy to step out of the rain and share our adventures with some of the tourists making a day trip around the bay. Surprisingly enough, the 12-day adventure culminated with a healthy sunburn on the faces and hands of we five weary travelers, a rare, but sometimes curious result while kayaking the glacier waters of Alaska. ❑

Scott is a writer, photographer, and film maker living in sunny Big Bear City, California. He spent several years working as a back country ranger and biologist in some of Alaska's greatest preserves including Glacier Bay

Within Our Ranks

Longtime members of The American Polar Society and readers of *The Polar Times* are familiar with the polar heroes, sung and unsung, who have been actively associated with and frequently honored by the Society. These illustrious individuals — many of whom have earned a permanent place in the world's annals of polar exploration and science — have also been teammates, tent mates, and scholarly partners to countless members of the APS who joined with or have followed in their footsteps to the northern or southern reaches of our planet.

As time passes, it is appropriate that we inform or remind our new generation, polar heroes of the future, of those who have broken the trails, endured hardship and disappointment, persisted and succeeded. They will find that it is no coincidence that so many of these illustrious individuals have found kinship as members of the American Polar Society.

In this issue of *The Polar Times* and issues to follow, as well as on our website, we will offer brief biographical sketches of these polar luminaries, past and present. Look for the caption "Within Our Ranks," to read about these individuals. And if you have candidates for inclusion in this series, please advise by emailing to cv1957@optonline.net or moki@cloud9.net. ❑

Discovering the Power of the Human Spirit

by Moki Kokoris

In much the same way as peanut butter and jelly go together, so do the personalities of dynamic duo Josh Thomas and J.J. Kelley. They were both 20 years old when they met while independently hiking the Appalachian Trail, finishing it together. Their newly forged friendship and mutual zeal for outdoor adventure brought forth a plan to bike the 2,000 kilometers from Seward to Prudhoe Bay in Alaska, with cameras in tow. This Pacific Ocean to Arctic Ocean journey became their first film, *Pedal to the Midnight Sun*. A portion of the documentary aired on NatGeo television and won a number of awards. Two years later, the filmmakers embarked on yet another adventure – to document their 2,100 kilometer sea-kayaking trip through the Inside Passage from Skagway to Seattle. The resulting film *Paddle to Seattle* received top accolades at film festivals, and aired on PBS and Outside TV. *Paddler Magazine* called it "the best sea-kayaking feature film created in the past decade." Even though the pair had numerous remarkable experiences during the 96-day kayak trip, both men will tell you that the most memorable moment was paddling among a pod of humpback whales.

Photo credit: Brian Dixon – 2008

Josh Thomas and J.J. Kelley kayaking the Inside Passage in Alaska.

What makes both films so successful is their unassuming style that is laced with wit, candor and plenty of unscripted humor. Josh and J.J. address the issues of traveling in a self-sustaining manner with honesty and genuine appreciation for what they are experiencing, including the few mistakes and close calls. Even through unexpected hardships, they refuse to be defeated. During their first joint adventure, they joyfully documented encounters along the bike route, such as a visit with Santa at the North Pole, and a photo op in front of the sign that marks the latitude line of the Arctic Circle. One comical scene shows Josh and J.J. coming across a plaque that reads "Farthest North Spruce Tree on the Alaskan Pipeline; DO NOT CUT." In complete ad lib fashion, J.J. faces the camera and says, "I kind of expected it to be alive." Sure enough, the tree is very dead.

> *Josh and JJ. address the issues of traveling in a self-sustaining manner with honesty and genuine appreciation.*

While each of the adventurers brings his own character traits and past experiences to the team, the enthusiasm for wild places that both possess clearly reveals their passion for nature and the people they meet, as well as their desire to travel in a low impact way. Between adventures, as J.J. continued to hone his skills as a filmmaker, Josh's curiosity (and a girl that remains nameless) led him to take a job on Antarctica, at both McMurdo and South Pole Station.

The duo is currently preparing to undertake their most ambitious journey yet – to travel down the Ganges River, which is said to be one of the most polluted rivers in the world. Beginning at 12,700' elevation at the mouth of the Gangroti Glacier in the Himalayas – the source of the Ganges – Josh and J.J. plan to pack-raft through India using ultralight (4-1/2lbs) inflatable rafts that fit into backpacks, and stop at villages along the route to collect stories from the people about their plight. Although this new trek will focus on environmental issues, there is little doubt that the accounts will be presented with optimistic and entertaining flair.

Whether they pedal or paddle, Josh's and J.J.'s vivacious style and unflappable spirit will carry them far. ❑

Photo credit: Brian Dixon – 2008

J.J. Kelley and Josh Thomas, Inside Passage, AK.

A Mainer on the *Jeannette*

by Charles H. Lagerbom

The *Jeannette*, a bark-rigged wooden steamship built in England in 1861, was originally a British warship. Sold in 1875 by the Royal Navy, she was used for some Arctic voyages by Sir Allen Young, then sold once more in 1878 to newspaper publisher James Gordon Bennett where she was renamed *Jeannette*. Outfitted in San Francisco for a multi-year drift in the ice across the Arctic Ocean and North Pole, she was put under the command of the US Navy Lieutenant George Washington DeLong. It was a daring and ambitious plan and became one of the more harrowing stories of 19th century Arctic exploration. It also involved a young man from Penobscot, Maine, by the name of Herbert Wood Leach.

The Jeannette *in San Francisco Bay, July 1879.*

When she weighed anchor at San Francisco on July 8, 1879, aboard was 21-year-old seaman Leach. Born into a farming family in down-east Maine, Leach chose to go to sea in 1872 when he was just fourteen years old. For the next seven years, Leach sailed the world and visited many exotic ports. In 1879, his ship docked in New York City, having completed a run from Australia. While there, one of Leach's shipmates saw a recruiting poster for DeLong's polar expedition seeking young, single men for a three-year trip to the Arctic. Initially, Leach expressed little desire to go north but was talked by his mates into taking the required physical. Ironically, his shipmates failed their examinations while Leach passed his. He must have had a change of heart because he did indeed sign on as an ordinary seaman US Navy on May 16, 1879. Leach made his way to San Francisco and joined 32 others for the exciting adventure. The 5'11", 200-pound experienced sailor was ready for the adventure of his life.

Twenty-three days and 2,000 miles later, the ship put in to the harbor of Unalaska amidst thick fog. They moved on another 600 miles to St. Michael, where the expedition hoped to collect coal from a rendezvous with the *Fanny A. Hyde*, as well as procure local sled dogs. But the relief ship was not there, and *Jeannette* was forced to await its arrival six days later. The coal ship then accompanied *Jeannette* to St. Lawrence Bay on the Siberian side of Bering Sea. The two ships parted, and *Jeannette* made her way through Bering Strait near the Diomede Islands. They encountered thick ice just short of Herald Island and on September 6, 1879, were frozen in for the winter.

By November the beset crew watched constant large ice floes grind into one another and circle the ship. Fearing they might be crushed between such floes, orders were given to prepare sledges to haul the ship's smaller boats and some supplies to safety. After several nerve-wracking false alarms, the ice settled down and, by December, had solidified around the vessel. From then on, officers and crew battled bone-chilling cold, ennui, scurvy, diarrhea and constant darkness. To celebrate the holidays, the crew was presented with four quarts of brandy and a special dinner of mince pie. In return, the crew staged an entertainment of singing, imitations and other performances, including the farcical play "Money Makes the Mare Go." In it, Leach played Charles Tilden, a promising young man in love with Miss Sage, played by Seaman Walter Sharvell. The performance was a big success. More abandon-ship scares occurred in December as ice rocked them, including a particular-

The loss of the Jeannette • On the march after leaving the ship • Breaking up camp (Drawn from minute descriptions by Lieutenant Danenhower)

ly nerve-wracking incident when the ship's fire-room filled with water, and they had to resort to hand-pumps.

By May 1880, four-foot-thick ice still held them fast. Summer and fall passed with no release, and winter once more descended upon them. The sun returned in February, yet the ship remained locked in ice and by April had drifted across 76° 19' north latitude. By early summer 1881, they spotted two islands; one, they named *Jeannette*, and the other they named after expedition sponsor James Gordon Bennett.

The crew also began to suffer from lead poisoning. On June 11, 1881, the ship was forced by ice onto its starboard side at about 30° incline, and the entire spar deck became submerged. Men quickly moved onto the ice. At 4 o'clock in the morning on June 13, *Jeannette* first righted onto an even keel and then slowly sank. The nearest shore, Siberia's Lena Delta, lay five hundred miles away.

The men spent a few days sorting through huge piles of gear and supplies scattered on the ice and making their plans. The loads they hitched on traveling sleds included two small cutters and a whaleboat. They also packed 60 days' worth of rations. One of the ship's officers, Lt. John W. Danenhower, noted that their retreat started on June 17, 1880, the anniversary of Bunker Hill.

The men often relayed heavy loads, significantly adding to their mileage. Leach, in a special detail of four men, helped operate one of two dog teams that pulled two light St. Michael's sleds and advanced extra provisions while others hauled sledges. DeLong wrote "Erickson and Leach run two dog sleds, trip after trip, all day." Being from Maine and familiar with snow travel, Leach was called upon to help repair when the sleds broke down. Danenhower noted, "I depend upon his judgment." Leach's help must indeed have been good, as the sleds never again broke down.

They struggled across ice pressure ridges and countless leads of dark Arctic water through most of June and all of July 1881. At times, they found themselves farther back than when they had started that day, owing to the peculiar drift of the ice. They flew flags to celebrate July 4th, their sixteenth day on the march. By July 14, the dogs started to give out, and Leach was put to work boat hauling. By the end of July they officially claimed and landed on Bennett Island. As they moved on, they left a record of their passing.

Expecting to encounter open water, the expedition rearranged itself into three parties for the three small boats. DeLong took thirteen in the first cutter, second in command Lt. Charles W. Chipp took ten in the second cutter and Chief Engineer George Melville took ten into the whaleboat, which they named *Rosy*. The *Rosy*'s crew included Leach and Lt. Danenhower.

The days were cruel, with constant soakings, backbreaking labor and dwindling rations. The three boats faced constant threat of swirling ice floes, with men weakened and cold and wet. At night, they dragged boats onto the ice and camped. Rain showers and wet heavy snow made conditions even more miserable. By end of August, they searched for signs of ice break-up, as they neared the pack ice edge. On September 5, they reached Kotelnoi Island off the Siberian coast. Leach, ordered to investigate the island's southern side, reported the existence of a hunter's vacant log hut as well as an elephant tusk.

On September 12, 1881, the expedition gladly said farewell to the last of the ice pack after a grueling 92-day ordeal since their ship sank. Their three small boats then entered the open Arctic waters. In Leach's whaleboat, Melville had the boat cover rigged as a canvas forecastle as the only protection from the elements. As the boats struggled to stay together, the barometer rapidly fell and a gale burst down upon them. When the current helmsman of Melville's whaleboat struggled at the tiller, Melville (or Danenhower, depending on whose account one reads) replaced him with Leach. Danenhower referred to Leach as the best helmsman in the boat. Melville intended to relieve Leach in about four hours, but fate intervened. Gale force winds soon picked up, and the whaleboat wallowed in huge seas as darkness approached. Leach remained exposed at the tiller as the rest of the whaleboat crew took refuge underneath the canvas awning. In a letter home, Leach described the ordeal.

"About eight days before we reached the coast we encountered a heavy gale which nearly put an end to our sufferings. When it commenced to blow the Lieut. [Danenhower] put me at the helm. It was very cold and the boat was nearly full of water all the time in spite of the men's bailing for dear life. I sat at the helm about fourteen hours before the wind abated enough for me to be relieved. When the time came, I rose up and fell flat into the bottom of the boat. My feet were frozen stiff and my legs were chilled up to my body, so badly that I think they could have been taken off without my feeling it."

Amid stormy seas, Leach spotted DeLong's cutter and recognized the commander who motioned towards Melville's whaleboat. When he reported this to Melville, Leach was ordered to just watch his steering. Regardless, the three boats separated. Chipp and the second cutter were never seen again. Melville's whaleboat took on lots of water and all men, save Leach at the tiller, frantically bailed. Leach continued to steer the whaleboat in mountainous seas and earned high praise from the others. Melville wrote later in a dispatch to his superiors and singled out "...seaman Herbert Leach, who was at the helm for eleven hours in the gale, during which time his feet and legs were badly frozen; after which he worked manfully at the oars without a murmur, enduring the most intense pain."

Dragging the boats over the Arctic ice, June–August 1881.

At the height of the storm, Danenhower suggested they fashion a sea anchor and fling it overboard. They waited the exact moment for his order, while Leach steered admirably, and although they almost swamped the whaleboat with the effort, the drag worked. Leach and another sailor steered with a paddle through the night and eventually rode out the storm. In an attempt to revive the half-frozen men, Melville ordered everyone given a shot of whiskey.

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But DeLong or Chipp's cutters were nowhere to be seen.

The whaleboat landed on the Siberian shore in the Lena Delta on September 14, Leach and another crewman disabled with swollen legs. Danenhower wrote, "Leach and [coal heaver John] Lauterbach had been working manfully at the oars whenever their turn came, although their limbs were in such a condition that they could not stand, and had to be assisted to and from the boat." After about three days, they saw some native Siberians in kayaks and they proved to be helpful.

When *Jeannette* was crushed on August 2, and the men took to boats, they divided 20 days' worth of provisions between them. By September 1, they had 10 days' provisions, and when they landed in Siberia, Melville's boat had only four days' provisions remaining. The natives helped the weakened men to a Yakut village. Leach's legs were frostbitten, and he could not walk. Melville recorded that Leach was forced to crawl on his hands and knees. Danenhower noted that Leach's toes were black. Leach described his own suffering in a letter to his mother.

"When we got ashore I was in a tight fix. I could not walk and was in much pain and my feet had begun to putrefy. Bartlett, one of the men, took a knife and cut out the corrupt places and cut about half of one of my great toes off leaving about half an inch of the bone sticking out of the end."

It was at this point that Leach apparently reached his nadir. He must have been in agony with his frozen feet and crude amputations. As men made their way back to the whaleboat to go to a larger Yakut village, Leach did not want to continue. Melville wrote that…

"…Leach, whose feet were shockingly frozen, begged to be left behind, saying he would rather stay at Jamaveloch than risk the chances ahead. He and Lauterbach had lost all spirit; but it was at Leach's rapid and sudden change from cheerfulness to despondency that I was more astonished. Of course, I would not listen to his entreaties; so, very reluctantly, he embarked with the rest."

In the end, they did not proceed. With native Siberian assistance, Melville decided to wait at Jamaveloch for help to reach them rather than continue on to Belun, the larger villager. The men settled in and made chessboards or mended clothes, while Melville sent word of their presence. Leach was excused from any duty due to the condition of his feet. Melville noted that most of the other men's frostbitten limbs healed fairly quickly…

"…all save Leach, from whose toes the flesh had wasted away, exposing the bones. Gangrene had apparently set in, and if they were neglected for a day the odor was unbearable…But at this time Leach seemed ill all over. He had lost heart, and said he did not care whether school kept in or not. Although a brilliant fire was continually burning, and he sat so close to it that his jacket blazed, he yet complained of the cold, and when told that he was on fire said that it made no difference to him, he would get another jacket. Indeed, to all appearances it was quite an effort for him to tolerate the kind attentions of "Dr." Bartlett [fellow crew member who tended to Leach's feet]"

One incident during this dark time for Leach brought a glimmer of humor and perhaps was a sign that Leach's was beginning to bounce back. One of the sailors killed a goose and hung it in the top of their hut to thaw out for next day's meal. According to Melville,

"…they thawed, it is true, but too freely, for the juices and intestines dropped out and fell upon Leach, who was slumbering alongside Wilson. And yet even the commotion occasioned by this incident was pleasantly smoothed over by someone saying that Leach should not growl [complain], since he was getting more than his share of goose, and if he didn't like or want it, he had only to put it back again."

Soon they were assisted by a Russian exile named Kusmah who left for help on October 14, 1881. While they awaited his return, Melville noted Leach's big toe had turned black "…and was rapidly sloughing away, notwithstanding the constant care of 'Dr.' Bartlett, who did all to save it that mortal could with a surgical outfit composed of hot water, a jackknife, and some ointment which Danenhower had carried in a tin box for the relief of his eyes." Kusmah said he would be back with help in five days. After ten days, however, the men grew impatient and discussed marching everyone to the larger village. They even volunteered to haul Leach with them on a sledge, if only Melville were to give the order to start. He did not and preferred to wait for Kusmah's return. The Russian exile finally returned on the thirteenth day. He brought back startling news. Melville discovered that two men from DeLong's cutter had made their way overland for help and had reached a native village. But that had been three weeks earlier when DeLong's cutter had first made landfall, and DeLong and his men had been critically short of food even then.

When he finally met up with the two men, Melville learned that DeLong and the rest were probably already dead by that point. Even so, Melville intended to search for their remains, so he sent Danenhower, with bad eyes, and Leach and some others south 600 miles to Yakutsk. They traveled by reindeer and horse-drawn sleds that occasionally overturned. At the top of one particularly steep slope, they lashed eight sleds together into a raft, put Leach in the center as he still could not walk and slid it down the slippery hill. They arrived on December 17, 1881.

While at Yakutsk, mail from home finally reached the expedition. Leach was overjoyed to receive nine letters. It was here he quickly composed his letter to his mother in which he described their ordeal. For Christmas, they had a group photo taken. By December 30, they were still in Yakutsk and Leach still experienced trouble with his frozen feet. By late January, the survivors arrived at Irkutsk, the first opportunity for telegraph communications. At some point, Leach had a doctor remove the open bone end. "It troubles me to walk now and I think that it will for some time," he wrote.

By March 1882, Leach and the others were

USS Jennette*'s boats separate in a gale, north of Siberia, 12 September 1881. (Upper left, Chipp in second cutter; upper right, Melville in whaleboat; foreground, DeLong in first cutter).*

Survivors of the Jeannette *Arctic expedition, based on a photograph taken at Yakutsk, Siberia, in 1882. U.S. Naval Historical Center Photograph (Left to right: back row — Newcomb, Noros, Wilson, Tong Sing, Anequin, Leach; middle, seated — Melville and Danenhower; front — Lauderback, Bartlett, Coles, Nindermann, Mansen:*

still in Irkutsk. They had received word of US Navy personnel on way to meet them, and Danenhower put Leach in charge of an advance party and sent them forward on March 11 to meet up with Lieutenant Giles B. Harber. A dispatch from Leach reached Harber on March 18 suggesting they meet up in Krasnoyarsk. They met at the small Siberian town, and Leach hand delivered a letter from Danenhower. They were to remain in Krasnoyarsk until further instructions. Harber, much impressed with Leach, wrote for permission to take him and the others along with him back east to help search for Chipp and DeLong. Leach expressed interest in doing so in his letter to his mother.

"By the way they are going to form a search party and I think it is my duty to join it and search for the poor boys that are left. I don't know whether I shall go or not. If I do you must not worry about me for we shall not start before spring, and will get back next fall, so you see it will not be long to wait and no risk to run, and besides you want to see your son do by another as you would have another do by him."

Harber received permission to make use of Leach and the men in search efforts. On April 2, 1882, Leach and four others of Danenhower's advance party reported to Harber for the search. They returned to Yakutsk on June 21 and attempted to charter a schooner named *Lena.* The search team did depart Yakutsk on June 23 for the Lena Delta but in a small schooner named *Search.* By July 1, storms and rough waters had damaged their rudder and carried part of it away. They put in at the small village of Zemovialach, and Leach remained there while Harber took some men in a whaleboat and departed July 18. Also during that month of July, local Maine papers such as the *Castine Visitor* identified one of their own involved in the expedition and noted that Leach was indeed one of the survivors.

With Harber off searching, Leach took part in another search effort with another naval officer, Master William H. Schuetze. This group used a dory to search for survivors or remains of Lt. Chipp's cutter last seen during the storm at sea. Loaded with three weeks of provisions, they left Zemovialach on July 20. The following day, Leach recognized one of the huts they had used after their landing on the delta. On July 25, Leach helped Schuetze drive two deer into the river until they could be dispatched for their larder. By early August the weather had turned sour and the men were cold and wet, no doubt excruciating for Leach and his injured feet. They returned to Zemovialach on August 7 and provisioned themselves for another search attempt.

Schuetze departed Zemovialach on August 22, 1882 to search westward near the Olenek River. They took a whaleboat this time, and Leach was once again one of the party. The going proved difficult, and many times men had to get into shallow waters of the delta and drag the boat. On August 28, Schuetze reported they had to stop to help repair Leach's boots "...which having been used in march to Olenek yesterday were nearly worn out in consequence." The terrain and conditions must have aggravated Leach's already painful feet, although he was mobile enough to shoot some ptarmigan that night. The following day Leach was in cold water helping to track the boat for over a mile before heavy surf threw the craft up onto a beach. By end of the month, Schuetze reported all hands extremely wet and in water trying to drag the whaleboat. Finding no traces of Chipp's cutter or its men, Schuetze called a halt and returned to Zemovialach on September 7.

Leach and others proceeded to Bulun and reached it on September 15, 1882. Harber then ordered Ensign H. J. Hunt to take the remaining survivors, including Leach, to Yakutsk then on to Irkutsk and home. They had to wait for cold weather so that what constituted as Siberian roads became passable. Leach and some of the survivors eventually reached Russia's easternmost railhead at Orenberg. Their rate of travel thus quickened, and they soon reached St. Petersburg. Then it was across Europe to Liverpool where they boarded a ship for passage to the states. Herbert Leach reached New York in the spring of 1883, and the final members of the expedition soon scattered. However, Leach was not done with the expedition, nor was the expedition quite done with him. For several years, official boards of inquiry convened, as well as congressional investigations, to look into the tragedy. During Danenhower's testimony before one official board of inquiry in November 1882, the Lieutenant made special mention of Leach as one of the leading men during the crew's retreat across the ice and subsequent boat voyage.

Leach returned to Maine in late April 1883, a local hero although he tried not to make a fuss. He slipped quietly into Bangor by train and caught the next one to Bucksport even before Bangor papers realized it. It was his first visit home in eight years. However at Bucksport, the reluctant hero created quite a sensation, and his return to Penobscot was further celebrated. He soon went on a lecture circuit and gave talks in Penobscot, Castine and Ellsworth. Discharged from the Navy in June 1883, he eventually married a Castine woman named Effie Wardwell. In 1885 they moved to Brockton, Massachusetts, where he worked 40 years at a shoe factory. In 1890, he received the Congressional Medal of Honor with a special engraved scene on its reverse of the *Jeannette* lowering her lifeboats. In 1898, he was awarded a $25 monthly pension. In July 1928, he participated as the expedition's sole living survivor at a memorial ceremony honoring DeLong at Woodlawn Cemetery in New York City. Herbert Wood Leach died at age 76 in Brockton and was buried alongside his wife at Hillside Cemetery in North Penobscot, Maine. ❑

References for this article are available upon request. Contact author Charles Lagerbom at clagerbom@rsu20.org

Due North

by Arctic Editors
Herbert R. Drury and Moki Kokoris

Herb: Beginning with Alaska and working eastward, I will list some highlights of Arctic activities and concerns since our last issue. The December issue of *National Geographic* magazine has an article about the controversial "Pebble" mine proposal for western Alaska that will threaten the world-famous salmon fishery there. And Shell Oil's desire to drill off the north coast in the Arctic National Wildlife Refuge area is still being considered by our Department of the Interior. In Palmer, the Musk Ox Farm is now under new management with a greatly improved newsletter and plans to raise much-needed funds for their unique "qiviut" wool industry that supports many cash-strapped coastal village knitters. Our icebreaker *Healy* has been supporting scientific studies in the Chukchi Sea aided by personnel from the Army Engineers Cold Regions Research and Engineering Labs and Dartmouth College, my alma mater. The Labs also have a branch in Fairbanks where our APS Secretary labors. China is now getting into Arctic research with their icebreaker *Snow Dragon* working in the Beaufort Sea and hopes to have a second vessel available soon.

In northern Canada, studies are ongoing at the "Beaver Pond" site on Ellesmere Island that contains rare fossils of organisms now either extinct or absent from the Arctic. A proposed coal mine nearby may threaten that precious resource. Another amazing find on Baffin Island is among the world's oldest lava deposits, almost five billion years "young." With ongoing ice melt, more activity is occurring in the Northwest Passage areas, including a cruise ship that struck a rock and a fuel tanker that ran aground. It took two days for an icebreaker to reach the tourists; no lives were lost in either incident. These and other problems will multiply as global warming continues, and it is obvious that both the United States and Canada need to upgrade their polar fleets, as many experts have urged.

A large ice floe — four times larger than Manhattan — broke off the Petermann Glacier in north Greenland and drifted into Nares Strait in August. It is just one of many such icebergs spawned in both polar regions recently. Studies of the ice sheets occur daily by satellites, and NASA "Ice Bridge" flights over Greenland and Antarctica are supplementing those. A fourteen-nation, two-year effort to drill a fourth ice core in north Greenland is providing better samples of conditions there from 115,000 to 130,000 years ago, when seas were apparently some 15 feet higher, and temperatures were up to five degrees Fahrenheit greater. Another NASA study now suggests that current estimates of Arctic ice melt may be 50 percent too high.

Iceland has announced a reduction in its blue whiting quota while greatly increasing its mackerel fishing limits, thereby raising the ire of some competing European countries. A NASA photo shows an annual phytoplankton "bloom" off Iceland upon which numerous species of marine life depend. Among other impacts being discussed at worldwide meetings, continued climatic warming could disrupt ocean currents, affecting many such organisms and the lives of people dependent on those fisheries. The volcano that interrupted air traffic so badly was studied for over eleven weeks of "unrest" by satellites of several nations prior to its first eruption since 1823. There is still no way to accurately predict such events.

The "Doomsday Vaults" in Svalbard received some chili pepper seeds from Colorado and 115,000 different varieties of Asian rice from the Philippines, many of which were lost during the notorious Khmer Rouge regime. Norway also has been studying ocean acidity in Svalbard since the seas are now some 30 percent more acidic than before the Industrial Age. Estonia may finally allow limited gray seal hunting in the Baltic Sea after a 30-year ban.

Russia has opened "SP-38," a drifting ice island meteorological research station in the Chukchi Sea north of Wrangel Island, at least in part to bolster national claims in the area. Meanwhile, the Canadian Foreign Minister was in Russia to explain new Arctic policies that include a greater military presence in the North, probably referring to the conversion of Resolute Bay on Cornwallis Island to an armed camp. He said they will not do that everywhere, as Russia has also insisted, though both nations still claim overlapping areas of the Arctic Ocean such as the Lomonosov Ridge. The United Nations is expected to eventually rule on which of the claims will be acceptable to both countries. Also, Russia and Norway recently reached accord on a 40-year-old border dispute near the Barents Sea.

Among other events, the Arctic Sea ice reached its third smallest extent in September, the smallest being in 2007 and the next in 2008, as determined by various satellites and other monitoring systems over the past four decades. NASA's Goddard Space Center Earth Observatory records of many years declared June to August of 2010 to be the fourth hottest ever recorded, while last year was the second most heated period. The latest La Nina (cooler equatorial Pacific Ocean area) is thought to be responsible for the slight decline this year. Other investigations of note since our July issue concern certain "chorus waves" (electromagnetic fluctuations in space) apparently matching pulsations of the Northern Lights. Some researchers are using marine mammals such as narwhals in oceanic work, especially under Arctic sea ice off Greenland. Attached sensors send data to satellites giving more accurate information than other methods. Such is "modern technology" these days! All sorts of techniques are being employed to research everything from the stratosphere to well below the sea floor. Tiny particles, called aerosols, including different types of soot, are being monitored in studies of global atmosphere that affect climate change along with greenhouse gases like carbon dioxide, methane and other compounds emitted or absorbed by organisms, land, water, air and even celestial bodies. The liquid coating around snowflakes is under scrutiny relative to the protective ozone layer above the Earth, which has now stopped disappearing and may be fully restored in 40 to 50 years if man-made emissions continue to be limited by international treaties like the Montreal Protocol.

All sorts of meetings on the complicated subject of global warming are still occurring in various locations including Tianjin, China; Seoul, Korea; Kiribati, South Pacific; Mexico City; New York City and Washington, D.C.; Geneva, Lisbon; and elsewhere. The big follow-up to last December's United Nations failed Copenhagen convention of 194 countries was set for November 29 to December 10, 2010, in Cancun, Mexico, to hopefully produce a document to replace the Kyoto Pro-

tocol due to expire in 2012. Results were not known at press time, but we hope there may have been some progress toward the goal of trying to keep our planet from heating up more than three additional degrees Celsius in the near future. Good luck to all! ❑

Moki: Those of you who immediately upon receiving the latest issue of *The Polar Times* flip directly to my "Due North" installment, seeking to indulge your appetite for *jeux d'esprit*, may be somewhat disappointed. Why? Well, because this time around I have a plethora of official APS business to discuss…. However, now that I am envisioning at least half of you pouting, I will relent by promising to use comic relief whenever appropriate and politically correct, even while addressing formal matters. Yes, that's how much I dislike pouting.

The first newsworthy item is the "new and improved" APS logo. While being respectful of the historical attributes and in an effort to maintain close association with the original design and its color scheme, the improvements include a more polished illustration and a contemporary typeface. Our new letterhead stationery already sports this new logo, and the newly minted metal and enamel APS pins will reflect these changes as well, albeit with gold letters on a royal blue field as the circle's border. Order yours today! Heck, get two! Valentine's Day is coming.

The second topic on my list of APS news is our shiny new website – which as of this writing is in design development phase. Barring any unforeseen linguistic crises or unprecedented grammatical malfunctions, the official launch date is set for January 15th. The new website will reside on pristine URL real estate, too! For those of you whose computers possess exceedingly obstinate browser attitudes that insist on holding onto outdated bookmarks, be aware that our old cyber-address will automatically redirect any errant visitor to our new location in the "www" realm, which will be a very straightforward: www.americanpolarsociety.org

!!! We now interrupt this program for a very important public service announcement: The American Polar Society would like to take this opportunity to express its sincere gratitude to Charlotte Sinclaire, who gave her time to initially establish and since, when possible, update the website that has been in place to date. We want her to know that her services are much appreciated. <insert sound bite of reverberating applause> !!!

(with apologies to Ed Sullivan) And now, back to our shoe!

Where was I? Ah, yes. The new website.

Here's something that will give most of you cause to joyfully leap into the air and cheer: PayPal! Yes, we will finally have an online payment feature for new memberships and renewals, as well as one for donations and sponsorships. So, here's a subtle hint: DONATE! We'll even send you a new APS pin if you're extra generous. It comes with a secret balloon popper, too. Can't beat that deal, can you?

Among the 21st-century elements of the new APS website will be connectivity with the APS Facebook and Linked-In networking groups. We will also have a "Polar Luminaries" page, replete with bios and photos of APS members – past, present and future (was Ebenezer a member?). There will be "Members Only" access to exclusive data and information as well (a la that of the Antarctican Society's website).

One crucial website matter will, however, need input from *you*. Yes, *YOU*. As we collect Email addresses of our members, I will send out an appeal for your photos, videos, articles, and/or PowerPoint presentations that, with your permission, we could post for viewing. The objective is to share professional knowledge with interested parties, but more importantly, to entice new members, particularly the younger generation to whom we would be mentors. I'm certain that you can all relate when you hear a graduate student say, "Wow! I want to do that, too, one day!" These students are our future; and we should be their inspiration. Pretty heavy, huh?

There will also be an APS store where we will make available our pins, patches, and other items that we will add in the future, perhaps even books authored by our members. And I ask you, who wouldn't enjoy their hot-chocolate more if it were served in a mug with an APS logo on it? Seriously now.

But wait! There's more!

For your amusement (and as a teaching tool for your children/grandchildren) there will be a section on our website called "Bergie Bits," where we will post all sorts of entertaining polar trivia. Did you know that beluga whales are the only whales with vertebrae that allow them to turn their heads? …or that "narwhal" means "corpse whale" because it often swims belly up? …or that the hard section between a muskox bull's horns is called a "boss?" (I do not recommend you go to work tomorrow and call your boss a muskox, though)

Now that I have you sitting on the edge of your Barcaloungers (there's the beauty of having a captive audience), allow me to tell you yet one more exciting development at the virtual offices of the APS. I am thrilled to report that I managed to strong-arm, I mean invite William Gasperini into our fold. In the capacity of CBS News correspondent and contributor to Discovery, Bill has traveled extensively around the globe, with many of those journeys across vast regions of the Far North, where he collected a myriad of stories about life in the Arctic. He's been to Antarctica, too, lest those of you with southerly inclinations feel sleighted. Every conversation with him has made me wish I'd been taking notes, but what is truly fortunate is that he has kindly offered his expertise to the APS.

Don't think I wasted any time taking advantage of his magnanimity. His credentials gained us special access to the mammoths exhibit, more specifically to baby Lyuba, who was recently on display at the Liberty Science Center in NJ. Be sure not to miss our co-authored article about the Nenets and Lyuba in this issue, embellished with Bill's wonderful photographs that also occupy both the front and back covers. Working in close collaboration with him, I look forward to sharing more incredible accounts about the lands and indigenous cultures of the Far North.

So, are you as electrified about the aforementioned news as I was writing about it? No? *<insert sound bite of crickets>* Tough crowd.

Disclaimer: Any similarity to actual persons or events is entirely coincidental and unintentional, and no animals (or siblings) were harmed in the writing of this thought-provoking epistle.

P.S. In case you were wondering, the new APS website will not do your laundry. Sorry… ❑

Within Our Ranks:

Admiral Richard E. Byrd

Admiral Richard E. Byrd (1888-1957) was an explorer, aviator and American national hero. At a time when the Arctic and Antarctica were considered as remote as outer space, Byrd organized the most elaborate expeditions to these areas and pioneered the application of a new technology to the exploration of unknown and uncharted polar latitudes: the airplane.

Byrd was a Navy officer, but his expeditions of the 1920s and 1930s were privately organized. They were all-American outings featuring a rag-tag conglomeration of volunteers from every strata of society: millionaires and roustabouts, songwriters and PhD's. Byrd conceived the projects, recruited the personnel, raised the money and exercised command.

He made several historic flights over oceans, poles and glacial landscapes, conducted the first modern aerial mapping surveys of the Polar regions, brought back vast data bases compiled by the scientists who accompanied him and captured the imagination of millions of American men, women and children.

Like Lindbergh, he was one of the most popular and celebrated personalities of his era. He was given three ticker-tape parades in New York. Broadway stars performed in short-wave radio broadcasts transmitted to Little America, his Antarctic base station. A *New York Times* correspondent accompanied him to Antarctica and filed daily dispatches distributed to papers across the U.S., Europe and South America. A major publishing house even brought out a biography of Igloo, Byrd's dog.

He was the Babe Ruth, the Beatles of exploration. No one before him operated on the scale he did. No one accomplished as much. He believed in planning for the unexpected as well as the expected and never lost a man on the ice. ❑

About Our Centerfold

Fogbow over Arctic Ocean, late August, Kaktovik, Alaska. ❑ Photo credit: Ken Tape, www.arcticcirclephoto.com (Please see review of Ken Tape's book *The Changing Arctic Landscape* elsewhere in this issue.)

Last Byrd Man Lives in Schenectady

***[Schenectady] Daily Gazette*, 18 July 2010, by Sara Foss**—Ninety-five-year-old Anthony Wayne, the last living member of the crew that accompanied Adm. Richard E. Byrd to Antarctica in 1939, lives at Kingsway Manor Assisted Living in Schenectady, in a room decorated with Navy medals and pictures of his deep sea diving days and journey to Antarctica.

Photo courtesy Anthony Wayne

Byrd seaman Anthony Wayne: "I thought, 'Who the hell goes there?'"

"I thought, 'Who the hell goes there?'" he said. "It was something new. I was never sorry I went, but I was glad I came back. I thought I'd never survive. It was all frozen ice. There was snow 20 feet high and icebergs all over."

Wayne joined Byrd on his third and final pre-World War II expedition, formally called the United States Antarctic Service Expedition. He was a seaman on USS *Bear*, a three-masted wooden barquentine built in 1872, that sailed in company with USMS *North Star* from Boston and headed south, through the Panama Canal and then west toward New Zealand and Australia.

Along the way, they hit bad weather.

"South of the equator, we ran into heavy strong winds and large sea waves that had the bow of the ship underwater for many days and nights," Wayne wrote in a piece on his trip to Antarctica. "There were high seas and heavy rain. The closer we got to the Antarctic Circle, we had heavy snow and very freezing temperatures. We had a few good clear days, and on those days Admiral Byrd set up full sail."

Born Anthony Kelczweski—Wayne and his wife changed their last name after World War II—Wayne attended Van Antwerp Junior High School in Schenectady but never went to high school or college.

Wayne enlisted in the Navy in 1933, seeking, he said, "adventure and a man's world."

In his Antarctic photos, Wayne is often smiling and he has a scruffy beard. In video footage, he can be seen climbing the ship's rigging, handling birds and hanging out with the other crewmembers. There is also footage of emperor penguins, seals and even a whale and scenes of the sled dogs running across the ice and the snow cruiser being driven onto the ice.

Wayne said Byrd selected him for his crew because he was in excellent physical shape and, as a native of upstate New York, accustomed to cold weather.

"He was looking for a specific kind of person," Wayne said. "I was a wrestler, a boxer. I was a big man, strong. You have to be a strong man to go on a sailing ship, to roll up sails and lash them down."

Wayne returned to the U.S. for the winter and requested a transfer. He was sent to the battleship *Texas*, which patrolled the North Sea. After the bombing of Pearl Harbor, he was transferred to USS *San Diego*, one of the most decorated ships of World War II, and spent two and a half years in the South Pacific. The ship supported the first American offensive of the war, the invasion of the Solomon Islands at Guadalcanal.

Wayne served in the Navy for 26 years, retiring as a chief warrant officer. After he retired, he settled in Fontana, Calif., where he attended Chaffey College and became a car salesman. After his wife, Agnes, died five years ago, he returned to Schenectady.

Wayne has visited Byrd's grave at Arlington National Cemetery and remembers him fondly.

"He was a very beautiful person," Wayne said. "He was very friendly, very nice. He was the best admiral I ever saw." ❑

Editor's Note: to view footage that Wayne took on his expedition, including the Snow Cruiser driving off the ship, go to: http://www.dailygazette.com/videos/2010/jul/18/488/

Elephant Seals Map Antarctic Seafloor

Copyright: Daniel Costa

The elephant seals were diving to depths that, according to the charts, were below the sea floor.

***UC Santa Cruz press release*, 15 October 2010, by Donna Hesterman**—Oceanographers are using data collected by elephant seals to improve their map of the seafloor on Antarctica's continental shelf. The new map results from a collaboration between Daniel Costa, a professor of ecology and evolutionary biology at UC Santa Cruz, who has been studying southern elephant seals in the region, and oceanographer Laurie Padman of Earth & Space Research in Corvallis, Oregon.

Between 2005 and 2009, Costa tagged 57 southern elephant seals with satellite transmitters as part of a habitat ecology study. "We were interested in the animals—where they went and what they did," he said.

When the Wilkins Ice Shelf extending from the Antarctic Peninsula began to crumble in 2008, Costa realized that the data collected by his tagged seals might help oceanographers figure out why the shelf was collapsing. "I knew that we had animals that had been swimming around and collecting data in that area," he said.

Costa's research focuses on the food-web relationships that support large ocean predators like elephant seals and how climate change affects them. He developed and pioneered the satellite tags used in the study in collaboration with the Sea Mammal Research Unit at the University of St. Andrews, Scotland. The tags record temperature, salinity, and pressure data wherever the animals roam. Attached to the seals' fur, the instruments collect information for one year before being shed along with the fur in an annual molt.

The tags store data as the elephant seals dive to the bottom to search for food and then transmit it to a centralized database via the Argos satellite system when the animal surfaces. Costa's study gathered data over a period of four years, during which the seals made tens of thousands of dives to the ocean bottom. As the researchers analyzed the data, a picture of the seafloor emerged that didn't match the existing maps. The animals were diving to depths that, according to the maps, were below the sea floor.

The extreme conditions around Antarctica make seafloor mapping a challenge. Traditionally, ships pass over an area and take direct measurements to chart the ocean floor, but the icy waters around the Antarctic Peninsula are difficult to navigate, so many of the areas around it are charted based only on estimates gleaned indirectly from satellites.

When the Wilkins Ice Shelf began to disintegrate, oceanographers analyzing the waters below it needed an accurate picture of the seafloor to understand the currents swirling under the ice shelf. Thinking his data might help, Costa contacted Padman, and they began to piece together an improved picture of the ocean floor around the Antarctic Peninsula.

The new map they constructed shows deep troughs cut into the continental slope that deliver warm water from the open ocean past the continental slope and up into the frigid waters below the Wilkins Ice Shelf. Padman said he suspects that the warm water flow may have played a role in setting off the ice-shelf collapse.

The researchers reported their findings in a paper published in Geophysical Research Letters. The coauthors include Tom Bolmer of Woods Hole Oceanographic Institute; Michael Goebel of the NOAA Antarctic Marine Living Resources Program; UCSC graduate student Luis Huckstadt; Adrian Jenkins and Deborah Shoosmith of the British Antarctic Survey, U.K.; and Birgitte McDonald of Scripps Institution of Oceanography. ❑

Antarctic Orcas Dine on Penguins

***BBC*, 20 July 2010, by Matt Walker**—Orcas regularly feed on penguins in Antarctica, scientists have observed for the first time. Marine biologists Dr Robert Pitman and Dr John Durban of the US National Marine Fisheries Service, made the discovery while researching orca foraging behavior around the Antarctic Peninsula.

"We had expected to see killer whales taking Antarctic minke whales and seals, which we did," Dr Pitman said, "but we were quite surprised to find them catching penguins also."

Three type of orca are known to live in Antarctic waters, each differing in size, coloration and the prey they hunt.

Type A orcas are the largest, are black and white and look most like orcas found elsewhere in the world. Type A orcas hunt minke whales. Type B orcas are smaller and have a yellow tinge. They also prey on minke and perhaps humpback whales but tend to prefer to hunt seals. Type C orcas are also smaller, with different markings, and prefer to live within inshore waters and among the pack ice, and to date have been recorded only feeding on Antarctic toothfish.

Drs Pitman and Durban witnessed several instances of predation on two different species of penguins: chinstraps and gentoos.

The attacks occurred over three separate days in the Gerlache Strait on the west side of the Antarctic Peninsula. The attacks were instigated by type B orcas, with some evidence that type A orcas may also have hunted and fed on a penguin.

During each attack the orcas chased a penguin, which porpoised out of the water and erratically changed direction under water in a bid to avoid capture.

When the orcas did catch a penguin, they often refrained from eating the whole bird.

COPYRIGHT: R. PITMAN

Two juvenile type B killer whales pull apart a gentoo penguin that they had just captured in the Gerlache Strait, 20 February 2010.

"We were surprised to find killer whales eating 4 to 6kg penguins, and even more surprised to find that they seemed to be mainly interested in eating just the breast muscles, rather like humans would do," says Dr Pitman.

Often the orcas handled their prey with meticulous care, removing skin and feathers to expose the breast muscle, sonetimes working cooperatively to do so.

The breast tissue may be particularly nutritious, but it is still unclear how much nutritional benefit a 3000kg orca would get eating selective cuts of a penguin weighing just a few kilograms.

"Penguins have enormous breast muscles to power winged flight through the water, but it is still a small part of an already small prey item. It would be like us chasing around after individual peanuts," says Dr Pitman.

"Ours is the first clear documentation of penguin predation in Antarctic waters but we don't know how commonly it occurs."

If it is common, then predation by orcas could have a significant impact on penguin populations in Antarctica.

In the past, biologists have suspected that orcas may have been responsible for a 50% decline in numbers of emperor penguins residing at Adelie Land, eastern Antarctica during the 1970s.

But no penguin remains were found inside the stomachs of orcas in the area.

The observations of Dr Pitman and Durban, however, suggest that these whales may have also been fussy eaters, removing breast tissue and not bones, which would leave little trace in an orca's stomach.

The scientists report their findings in the 4 July 2010 issue of *Polar Biology*. ❑

Within Our Ranks: Colonel Norman D. Vaughan

Col. Vaughan began his polar career as a volunteer with the Wilfred Grenfell Medical Mission in Labrador in 1925, where he delivered medical supplies and performed medical evacuations by dogsled. This qualified him to become a member of the Byrd Antarctic Expedition from 1928-1930 during which he became the first American to drive dogs in the Antarctic. He was also the chief dog handler and driver for the 1,500-mile field expedition led by Dr. Laurence Gould, Byrd's second-in-command, which explored the geology of the Trans-Antarctic Mountains.

Dog mushing was an intimate part of Vaughn's life from that time forward. He competed in the Dog Racing event in the 1932 Olympics; participated in the WWII Battle of the Bulge, where he commanded 17 drivers and 209 dogs using dog sleds for the rescue of wounded soldiers; led the rescue of 26 downed aviators by dogsled from the Greenland ice cap in 1944; and returned to the site in 1988 to help recover one of the aircraft for a museum display. He has also mushed in 13 Iditarod sled dog races in Alaska where his last finish was in 1990 at the age of 84.

In December 1995, Col. Vaughan returned to Antarctica and climbed Mount Vaughan, a peak which had been named for him by Admiral Byrd in appreciation of his contributions to polar exploration. Vaughan was three days shy of his 89th birthday when he reached the summit. ❑

Due South

Transition–Transformation Reprise

by Managing Editor Cliff Bekkedahl

Earlier in this edition I addressed the change in leadership of The American Polar Society, and now I must address a change of no less import for *The Polar Times*.

Jeff Rubin has informed me that this January 2011 issue of *The Polar Times* is his final edition as Antarctic editor. Personal and professional demands on his time have increased, and he can no longer afford to devote the effort to *The Polar Times* as he has for over a decade.

At least half of each issue of *The Polar Times* is dedicated to subject matter involving Antarctica, and Jeff has continuously orchestrated the vast amount of material generated daily on the frozen continent and distilled it for our benefit into a delightful mix of factual reporting and insightful accounts of scientific and human events on the ice. Members will recall his many articles detailing the construction of the new South Pole station and his frequent reports on the rapid growth of Antarctic tourism. And who can forget his series on Antarctic cuisine?

When *The Polar Times* went full-color, Jeff routinely provided stunning and dramatic photographs of things Antarctic, many of which served as covers or centerfolds for the journal. His contributions to *The Polar Times* and his professional guidance to the editorial staff striving to do better each issue will be sorely missed.

Jeff's credentials as an authentic "polar bug" reach back to his authorship of *Antarctica*, one of the highly respected series of travel guides by Lonely Planet Publications (a copy of which every APS member should have on their desk). And while Jeff's talents as a writer, researcher and astute observer may well lead him into other fields of interest, we can be sure that there will always be a special place in his heart for Antarctica and *The Polar Times*.

Now the good news: Jeff's replacement will be John Splettstoesser. Yes, our past President of APS and a frequent contributor to *The Polar Times* has graciously and enthusiastically agreed to take on the responsibilities of Antarctic editor. I can think of no one better qualified from any imaginable aspect to succeed Jeff Rubin. John will be riding an Antarctic cruise ship again this upcoming season, as he has for many years now, and I'm sure he will provide us fresh insights on the sensitive subject of tourism as well as first-hand accounts of the people and events that comprise the big picture in and about Antarctica. ❑

Long Boards Return

by Dave Baker

Our APS treasurer, Dave Baker, is currently in New Zealand, some fifty-plus years since his last visit as a junior Naval officer during Operation Deep Freeze 1955-1956. During this January visit, he will return a pair of skis that were given to him as souvenirs of his time on the ice. Here is his story.

The skis were given to me when I was at McMurdo in 1956 by Captain Richard "Dick" E. Black, then-Base Ops Officer for Task Force 43, aka Operation Deep Freeze (and, incidentally, the person who interviewed me for DFI/II in Washington in June 1955, right after I had been commissioned at OCS). Black had found the skis at Cape Evans. He had quite an amazing collection of Antarctic artifacts, and I assume that he felt I might want to start my own collection. I have exhibited the skis over the years when speaking to groups about DF I/II and the history of South Polar Exploration.

One of the skis has the initials "AEM" carved into it (see photograph). Researching the names of those who were with Scott and Shackleton as well as the Shackleton support group in 1914–17, turns up the name of Aenas MacKinstosh, skipper of the *Aurora*, the ship that delivered the support party to McMurdo and was subsequently blown out to sea in a terrible storm on May 15, 1915. The *Aurora* had been moored in the lee of Cape Evans (if there is such a thing as the "lee" of anything in McMurdo). Capt MacKintosh was not on board when his ship was blown out to sea with only a small crew on board, and he remained with the support party at Cape Evans in Scott's 1910–12 Hut.

Photo by Dave Baker

There was an interesting and tragic conflict between MacKintosh and Ernest Joyce, the latter had been given explicit instructions from Shackleton to take charge of the sledging party that was to place caches between McMurdo and the base of the Beardmore Glacier, to support Shackleton as he made his traverse from the Weddell Sea to McMurdo. With the loss of the *Aurora* (she was not to return to McMurdo until January 10, 1917) Captain MacKintosh had no command, and he and Ernest Joyce, both men of strong will and disposition, apparently often were at odds as to what needed to be done. MacKintosh on more than one occasion "assumed" command. However, MacKintosh perished when he made an ill-advised decision to try to cross the unstable and poorly formed sea ice between Hut Point and Cape Evans. He was last seen by the men at Hut Point, heading out across the ice.

The other pair of skis has no identification. It is puzzling that the AEM initialed skis were left at Cape Evans when MacKintosh was on the cache setting traverse. We will probably never know why. Perhaps he had two pairs of skis. The story of the support group is documented in a book by Lennerd Bickle, titled *Shackleton's Forgotten Men*. A photograph on page 90 of this book shows six men with skis on the ice.

For several years I have been thinking about returning the skis to either the Ant-

Continued on page 29

Antarctic Notes

New Blue-Ice Runway Opens

***Adventure Network International (ANI) press release*, 3 Nov. 2010**—Land-based Antarctic tourism specialist ANI announce the opening of a new blue-ice runway and refurbished camp at Union Glacier (79°45'S, 83°14'W) 1100km from the South Pole. After a four-year process, the new runway has been inspected and is fully certified for intercontinental jets from South America. Patriot Hills will now be ANI's secondary runway in Antarctica.

Russian Antarctic Plans

***RIA Novosti*, 2 November 2010**—Russia plans to allocate some 6 billion rubles ($195 million) for research in Antarctica up to 2013, the head of Russia's meteorological service said. The government approved last week a national strategy in the Antarctic until 2020 and a scheme to build new research vessels.

Alexander Frolov said investment up to 2020 would be around 30 billion rubles ($975 million). The program will include the construction of five new vessels, a new Il-114-100T aircraft and the reconstruction of the eight Russian stations and seasonal bases.

Four French Die In Helo Crash

***Associated Press*, ADELAIDE, 30 Oct. 2010**—All four people on a French helicopter that crashed this week in rough weather were confirmed dead Saturday. The downed AS350 Squirrel helicopter was operated in Antarctica from the research vessel *L'Astrolabe*. It crashed Thursday night about 100km from Dumont-d'Urville station. The bodies of the four French citizens—a pilot, a mechanic and two employees of the French Polar Institute—were recovered with the assistance of a Hercules C130 sent by Australia.

Penguins Flirt with Homosexuality

***BBC Earth News*, 20 October 2010, by Ella Davies**—King penguins do not form long-term homosexual pairs despite same-sex "flirting," one of the first evidence-based studies has revealed. Researchers found that 28.3% of the birds in one colony displayed in same-sex pairs, yet only two pairs bonded by learning each other's calls and both were later seen caring for eggs in heterosexual pairs. The scientists suggest that these same sex displays could be caused by an excess of males or high levels of testosterone. Researchers studied the mating behaviour of king penguins at Kerguelen. Their research is published in *Ethology*.

Ocean Acidification Deadly for Krill

***Australian Antarctic Division press release*, 13 Oct. 2010**—New research on the impact of ocean acidification on Antarctic krill has found increased levels of CO2 kill their embryos. Ocean acidification is caused by man-made CO2 from the atmosphere being absorbed by the ocean. Krill biologist Dr. So Kawaguchi said most of the krill embryos exposed to higher levels of carbon dioxide did not develop, and none hatched successfully.

Antarctic Seas Explode With Discovery

***OurAmazingPlanet.com*, 8 Oct. 2010, by Andrea Mustain**—As part of the landmark Census of Marine Life (COML), a $650 million, worldwide, decade-long effort to catalogue the creatures that live in the planet's oceans, 19 different voyages collected samples from more than 2,000 locations around Antarctica. In the process, researchers inventoried 16,000 Antarctic species new to science. One tool that has driven the startling increase in the number of species scientists uncovered is DNA barcoding—a technique that allows scientists to swiftly differentiate species by examining their genetic signatures.

No Sea Ice-Ozone Hole Link

***ScienceDaily*, 6 Oct. 2010**—Although some scientists have suggested that increased Antarctic sea ice extent can be explained by the ozone hole over Antarctica, a model used by M. Sigmond, of the University of Toronto, and J. C. Fyfe, of the Canadian Centre for Climate Modelling and Analysis, found that ozone depletion would lead to a year-round decrease in Antarctic sea ice extent rather than the increase that was observed. It remains unclear why Southern Hemisphere sea ice trends differ so greatly from Northern Hemisphere trends. The research appears in *Geophysical Research Letters*.

Expedition to Commemorate Scott

***The Telegraph*, 28 Sept. 2010, by Neil Tweedie**—The International Scott Centenary Expedition (ISCE) is being planned to honour Capt. R.F. Scott's doomed venture. In December 2011 or January 2012, Falcon Scott, son of the explorer's only child conservationist Sir Peter Scott, and four other representatives of the families of the dead will be flown via the South Pole to the spot on the Ross Ice Shelf where Scott was buried. The ISCE air party will meet an overland party of five people, who will man-haul sledges from Scott's starting point and back, a distance of 290 miles. "It will be quite emotional when it comes to it," says Falcon. "There will be some kind of ceremony, and I guess it will touch me. It's a tremendously emotional story, isn't it? It's classic tragedy. Yet in a way, the death of my grandfather was the making of him."

Scott Relics Fetch £370,000

***Agence France Presse*, LONDON, 23 Sept. 2010**—Photographs, skis, a sledging kit, scientific instruments and manuscripts belonging to Charles Seymour Wright, physicist on Scott's ill-fated Antarctic trip, sold for £370,000, Christie's said. Wright's archive of little-seen photographs of Scott's expedition were the top-selling item, reaching £73,250.

Norwegian Ship to Replace *Endurance*

***Defence Management.com*, 8 Sept. 2010**—A Norwegian icebreaker is to be acquired to replace badly damaged Antarctic patrol ship HMS *Endurance*, according to the *Portsmouth News*, which reports that the Norwegian vessel will be bought or leased to join the fleet in early 2011 and begin an 18-month deployment in March, allowing the Ministry of Defence (MoD) to avoid the estimated £30m cost of repairing *Endurance*. A MoD report found that inadequate training was to blame for the engine room flood which put HMS *Endurance* out of action in December 2008 as crew were working to improve the ship's supply of fresh water.

Antarctica in China's Sights

***Sydney Morning Herald*, 4 Sept. 2010, by John Garnaut**—China plans to extend its reach into Antarctica by building a new icebreaker, purchasing a plane and helicopters and upgrading its newest base into a year-round facility. The head of China's Antarctic program, Wei Wenliang, says the new Antarctic transport capability will enable Chinese scientists to live year-round at an expanded Kunlun station at Dome A. Mr Wei also revealed his scientists have drilled hundreds of metres into what will be a 1000-metre-deep ice core sample—which will shed light on 1 million years of climate history—and they plan to drill further for rock samples below. Mr Wei said China had budgeted to spend 780 million yuan ($125.8 million) in the two "five-year plans" ending next year, before a sharp increase in the next five-year plan. The new icebreaker, to be delivered in 2013 or 2014, will accommodate 60 scientists and 8000 tonnes of equipment, breaking ice as thick as 1.5 metres.

Argentines Study Methane Bubbling off Peninsula

***Nature*, 3 Sept. 2010**—Geologist Rodolfo del Valle and his team are about to spend three years focusing on a persistent methane leak in the Erebus and Terror Gulf off the Antarctic Peninsula. When he saw the commotion in 2000, del Valle was intrigued, despite 38 years' experience in the region. Methane is not only 25 times more powerful than CO2 at heating the atmosphere; methane hydrates locked up in the Antarctic seabed and ice also contain vast amounts of carbon. Overall, methane deposits contain about half of global carbon. "By quantifying the emissions and establishing their magnitude, we will be able to begin to determine how they will affect global warming," del Valle says. "We believe there is a huge amount of destabilized methane deposits that may leak into the atmosphere and ramp up warming." Findings from the mid-1950s showed unusual numbers of crabeater seals dying in this area. Members of that expedition suggested that methane could be implicated.

China Aims for New Heights in Astronomy

***Science*, XI'AN, China, 3 Sept. 2010, by Richard Stone**—Last year, Chinese researchers opened Kunlun Station near Dome A, at 4093 meters above sea level. At a workshop here last month, astronomers unveiled plans to build two major telescopes at Dome A during the Chinese government's next 5-year plan, to start in 2011. The 2.5-meter Kunlun Dark Universe Telescope, or KDUST, would survey the optical and near-infrared bands for planets beyond our solar system and plumb the mysteries of dark matter and dark energy. However, "one instrument would be lonely," says astronomer Yang Ji, director of Nanjing's Purple Mountain Observatory, which is developing a companion: a 5-meter terahertz telescope to observe 200- to 350-micrometer wavelengths. The Chinese Academy of Sciences has requested 1 billion yuan ($150 million) for the telescopes and support platform—one of several science megafacilities that the country's powerful National Development and Reform Commission is weighing for the 12th 5-year plan. A decision is expected around year's end.

Fishing Threatens Krill Stocks

***Nature*, 1 Sept. 2010**—Ecologists are warning that the rapid growth in krill fishing is adding to the pressure of environmental changes threatening krill and are calling for better monitoring and precautionary management of krill fisheries. The global fish-farming industry increasingly relies on krill-based fish feed; enzymes and chemicals derived from krill are included in a number of dietary and medical products. Last year, Oslo-based Aker Biomarine upgraded its vessel, *Saga Sea*, to boost its krill catch. The total krill catch this season is expected to exceed last year's total by about 40%.

Ancient Ross-Weddell Seaway Suggested

***BBC News*, 31 August 2010, by Pamela Rutherford**—Scientists studying bryozoans living on either side of the 2km thick Western Antarctic Ice Sheet have found evidence for an ancient sea passage linking the Ross and Weddell seas. Reseachers think their spread was due to the collapse of the ice sheet as recently as 125,000

years ago, allowing water flow between different regions. Their findings are published in *Global Change Biology*. Bryozoans are tiny, filter feeding marine animals which in their adult form are immobile, living glued to rocks or other surfaces. Scientists from the British Antarctic Survey have revealed striking similarities between bryozoans living in the Ross and Weddell seas. These are 1,500 miles apart and separated by the WAIS, the third largest ice mass on the planet. "This is the first time there's hard direct evidence that there has been a collapse," said Dr. David Barnes. "That would make the WAIS the least stable of the three ice masses."

Why Antarctic Sea Ice Is Growing in a Warmer World

***National Geographic News*, 16 Aug. 2010, by Christine Dell'Amore**—Climate scientists have cracked the mystery of why Antarctic sea ice has managed to grow despite global warming—but the results suggest the trend may rapidly reverse, a new study says. Satellite data show that, over the past 30 years, Arctic sea ice has declined while Antarctic sea ice has mysteriously expanded, according to study leader Jiping Liu of Georgia Tech. The new analyses are based on climate models and sea-surface temperature and precipitation observations from 1950 to 2009. They show that, in the 20th century, ocean warming boosted precipitation in the upper atmosphere over the Antarctic, which fell as snow. More snow made the top layers of the ocean less salty and thus less dense. These layers became more stable, preventing warm, density-driven currents in the deep ocean from rising and melting sea ice.

As increasing greenhouse gases continue to warm the oceans off Antarctica, more Antarctic precipitation will turn to rain, which rapidly melts snow and ice, according to the study, published this week in *Proceedings of the National Academy of Sciences*.

Shackleton's Scotch to be Replicated

***Sydney Morning Herald*, 15 Aug. 2010, by Ian Stuart**—Malt whisky found trapped in ice in Shackleton's hut (see *The Polar Times*, Jan. 2010, p19) has been recovered and is to be replicated by Scottish distillers. Shackleton ordered the then 10-year-old whisky for his 1907 Nimrod expedition. Even though the crate was frozen solid when it was brought back to Christchurch this year, the minus-30 temperature was not enough to freeze the whisky, and it was in good condition. Over the past few weeks the crate has been slowly thawing at the Christchurch Museum. On Friday, it was opened to reveal 11 bottles carefully wrapped in paper and straw. The whisky is unlikely ever to be tasted. Once samples have been extracted and sent for replication to the Scottish distillery which took over from Mackinlay's, that bottle will be put back under the floor of Shackleton's hut. The original recipe for the whisky has been lost.

Found: First Sub-Zero Venom

***Wired.com*, 2 Aug. 2010, by Jess McNally**—An expedition to study Antarctica's octopus life has discovered four new species, and the first known sub-zero venoms. "Antarctic octopus venom works at temperatures that would stop other venoms in their tracks," said biochemist Bryan Fry of the University of Melbourne. Antarctic octopuses catch their prey with their tentacles and use venom to kill them. The venoms may be potential sources of pain-killers, Fry said, because they work on the nervous system. Analysis of the venom has revealed two toxins new to science. Scientists don't know how the octopuses keep their venom working at freezing temperatures.

IceCube Finds Odd CosRay Pattern

LiveScience, 29 July 2010, by Clara Moskowitz—A puzzling pattern in the cosmic rays bombarding Earth from space has been discovered by the IceCube Observatory, an experiment still under construction at the South Pole that is actually intended to detect neutrinos. Cosmic rays are highly energetic particles streaming in from space that are thought to originate in the distant remnants of dead stars. The new study detected an overabundance of cosmic rays coming from one part of the sky, and a lack of cosmic rays coming from another. Previous studies have found a similar lopsidedness. ❑

Rutford Awarded SCAR Medal

***University of Texas at Dallas press release*, 1 Oct. 2010**—UT Dallas President Emeritus and Governor of the American Polar Society Robert Rutford has received the 2010 Medal for International Scientific Coordination by the Scientific Committee on Antarctic Research (SCAR). Rutford was recognized for his longtime leadership in international Antarctic research and for promoting international coordination in Antarctica for the last 40 years. The award also recognized his vice presidency and presidency of SCAR. ❑

Polar Classic

Where It's Coldest

by V. Ignatov

Moscow: Progress Publishers, 1965, 137 pp
trans. from the Russian by V. Vezey

Reviewed by Jeff Rubin

"Wow! 1965 is long enough ago for a classic?" past Arctic Editor of *The Polar Times* Dave Norton asked me when I proposed this book.

Yes, this is a classic, despite its relative youth. It would be easy to nominate one of the blue-chip—or should I say, "ice-chip"?—titles by Amundsen, Scott, Shackleton or Mawson for an Antarctic "polar classic," but sometimes it's nice to get off the beaten path.

Vostok, the setting of Where It's Coldest, is definitely that. This remoteness is part of what makes this book a classic, for narratives in English about life at Soviet or Russian research stations are rare enough. This is also an early narrative, about the Fourth Soviet Antarctic Expedition of 1959-60, making it even more interesting, and 31 velvety black-and-white photos enliven the text.

Ignatov, Vostok station leader, was already a veteran of several years' work in the Arctic, including a stint on the drifting station North Pole-7. He writes in a straightforward style, without embellishment or boastfulness, though he and his nine comrades well deserve to boast proudly of their stoic endurance of the daily difficulties at this spartan high-altitude outpost nicknamed by their predecessors "the Pole of Cold."

Vostok's elevation is 3488m, but the low pressure of the atmosphere makes it feel like 5000m. The air contains just 60% of the oxygen in the air at sea level. "We never had a good rest," Ignatov notes matter-of-factly. "We would often wake up with a feeling that we were about to strangle, and after gasping for breath a minute or so would again fall into a troubled sleep, or into a nightmarish semblance of sleep."

The other condition with which the Vostochniki struggled, of course, was the cold. "One never really gets used to it," the author writes. Earth's lowest surface temperature (-89.6°C) was recorded at Vostok on July 21, 1983. In August 1959, Ignatov and his men endured -85.7°C, which is pretty close!

"Words fail to describe the savage cold," Ignatov writes. "My special extra warm clothes were of no use. My hands went white the moment I took off my mittens. Touching anything sent something like an electric shock up my arms...The killing cold got into my lungs, and I began to cough uncontrollably. Further experimenting was dangerous, and I was forced to call it off."

Other effects of the supercold temperatures were interesting. Diesel fuel froze so hard that it had to be hacked with a hatchet. Antifreeze turned to pinkish ice. Gasoline would not ignite even when touched by a burning torch.

Their most poignant suffering, however, was caused by the difficulty of resupplying the station at the end of the polar night. Poor weather repeatedly prevented aircraft from taking off at the coastal station of Mirnyy or from reaching Vostok. Having exhausted their supplies of meat, tinned food, bread, fish and vegetables, the Vostok men dined day after day on meager meals of "spaghetti soup," "rice soup," "wheat meal porridge" and "buttered macaroni." With their tobacco gone, they "doped" themselves by smoking a medicinal herb known as "bear's ear." After that ran out, they tried smoking oak bark and even rope, which gave off "a sickening smell." Finally, just as Scott's polar party had, they settled on tea: in their case, best-quality Georgian.

When the first airdrop from Mirnyy in more than six months finally came, they recoved eight of the nine containers that were dropped. The ninth's parachute, unfortunately, was caught by the wind and dragged away. Despite following its trail for 16km, they were unsuccessful in catching up to the container. It contained vital batteries for their radiosondes—and 75 kilos of badly-missed chicken.

One of the Fourth Soviet expedition's scientific highlights was a traverse from Mirnyy to Vostok to the South Pole, made by 16 men using 34-ton Kharkovchanka tracked vehicles. Crossing sastrugi up to 1.5m high and often bogging down in deep fluffy powder snow, the Kharkovchankas arrived at the U.S. station at the Pole on 26 December 1959 after a 2700km journey.

Because it was late in the evening "local time," not a soul was in sight: all the Pole denizens were indoors watching a movie. Once they became aware of the Soviets' unexpectedly-early arrival, "our American colleagues" soon served their guests a late supper, including beer and steaming coffee. Using reports from his comrades, since he himself did not take part in the traverse, Ignatov notes that the U.S. station's "spacious mess...was equipped with a long table, modestly furnished, and had a Christmas tree in one corner. In another corner was a statue of a beautiful woman, lightly-draped, who, it appeared, presided over the place."

Ignatov's engaging memoir offers an unusual first-hand glimpse of early life at one of the harshest places on earth, a place where, as the BBC once said, science takes second place to survival. ❑

BOOK REVIEWS

The Longest Winter: Scott's Other Heroes

by Meredith Hooper
London: John Murray, 2010, 358 pages, $26.95

Reviewed by Charles H. Lagerbom

We all know Scott's last expedition. Beaten to the pole by Amundsen, Scott and his four companions struggled back along a thin trail of scattered depots only to fall short by 11 miles of provisions and help at One Ton Depot. We have also heard of Lt. Victor Campbell's ordeal, the struggles of his "Northern Party" forced to winter in an ice cave with scant provisions and clothing. What has been neglected or not yet fully examined is their relation to each other and their place in the larger context of the same expedition. This has been masterfully redressed in Meredith Hooper's *The Longest Winter: Scott's Other Heroes*.

In January 1911, Robert Falcon Scott said goodbye to Lt. Campbell and the Lieutenant's five companions. Scott was hurriedly preparing his fall depot journey which resulted in establishing One Ton Depot miles short of its intended position. Campbell and his men, considered the other main thrust of the *Terra Nova* expedition in addition to Scott's polar attempt, were headed to King Edward VII land to explore that largely unknown land to the east of Ross Ice Shelf. At least that was the plan.

Campbell's party, called the Eastern Party, chose not to land on King Edward VII land (due to the unexpected presence of Amundsen's winter quarters at the Bay of Whales) but instead wintered at Cape Adare, a mountainous and glacier-locked area at the northern end of Victoria Land already visited and investigated by an earlier expedition. It was an incredible let-down for Campbell and his team. But they resigned themselves to making the best of it, with the hope of later exploring west of Cape North. Hooper fleshes out these changes of plans and how they affected Campbell and his men. Using their own words from diaries and journals and correspondence, she examines the implications both physically and psychologically as well as how this affected Scott's overall plans for his expedition.

After their winter at Cape Adare and their failure to get beyond Cape North, Campbell convinced the *Terra Nova* to drop them off at Evans Coves to the south for two months' exploring. They expected to be picked up before winter but the *Terra Nova* failed to reach them. Forced to excavate an ice cave, the men suffered dreadfully and survived mainly by their ingenuity and hardiness. Hooper writes of their feelings of being abandoned, their not knowing why or how it happened. More interestingly, she examines the other people involved, whether aboard *Terra Nova* or back in England, who stated (perhaps too quickly or cavalierly) that Campbell and his men would be fine.

They were not fine, and the ordeal they endured makes a gripping read. Hooper tells their story in the timeframe it happened, not bringing in later or contemporaneous events of which they had no knowledge. Not only does this make their ordeal all the more grueling, it also puts the reader right in the ice cave with them whether choking on the blubber smoke (they called "smitch") or feeling the pains of hunger over their poor diet and physical results from it. She also brings all six members fully into the narrative, not only the officers Campbell, Levick and Priestley but also the seamen Abbott, Browning and Dickason, a long overdue redress in polar chronicles. It is also interesting that Campbell and his men expected or hoped for some sort of relief party to reach them and tortured themselves with "what if" scenarios as to why no one appeared. Almost fittingly, they had to extricate themselves from their ice cave winter quarters and sledge hundreds of miles back to Cape Evans, all on their own power, initiative and resources.

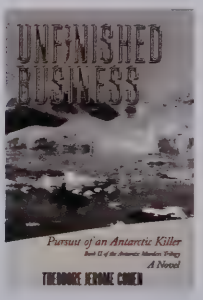
This ordeal would no doubt have dominated the expedition's main narrative, but for the news of the polar party's death, especially just a few miles from relief. According to Hooper, that tragedy reset the entire expedition. Almost without missing a beat, Campbell and his men were renamed the "Northern Party," and their ordeal, while horrible and grueling, relegated to the status of addendum to Scott and the fate of the polar party. This occurred whether in news coverage of the time or with publication of Scott's Last Expedition, where the "Northern Party" story was added almost as a sidebar in the second volume. This diminution of their struggles and achievements took hold even with Priestly's published account and even later publication of Campbell's abbreviated journals. Meredith Hooper has done us a great service in bringing Scott's other heroes their proper due. ❑

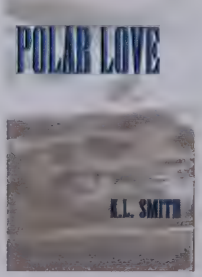
Frozen in Time: Murder at theBottom of the World

by Theodore Jerome Cohen (AuthorHouse, 2010, 18pp, $15.49)

Unfinished Business Pursuit of an Antarctic Killer, Book II of the Antarctic Murders Trilogy

by Theodore Jerome Cohen, (AuthorHouse, 2010, 234pp, $15.49)





Polar Love

by K. L. Smith (Vantage Press, 2008, 130pp, $11.95)

All reviewed by Valmar Kurol

Antarctic novels authored by veteran Antarctic scientists are a rare occurrence and initial expectations for both books run high, insofar as the reader has the confidence that the authors will have the physical reality and backgrounds of their Antarctic settings down pat. *Frozen in Time* and *Polar Love* are recent novels with events based, respectively, at Chilean Antarctic sites and at Deception Island, where the authors had significant experience. Both offer rather detailed descriptions of life on the ships, which take their science protagonists to their destinations, as well as of the particulars of their scientific specialties.

Cohen has been an engineer and scientist for over 40 years and during 1961-62 participated in the 16th Chilean Expedition to the Antarctic. In 1964, the Cohen Islands, near Chile's present O'Higgins base, were named after him. Although *Frozen in Time*, his second book, is fiction, it is based on events and characters from his real life. In the story, a young University of Michigan graduate geology student, Ted, from whose point of view the novel is written, has the chance to join a Chilean Antarctic expedition. He makes the journey to various sites along the Antarctic Peninsula on the way to the base, with a flotilla of three Chilean naval supply vessels.

Unknown to all, two non-commissioned officers on one of the ships have previously robbed a Chilean bank and stowed their booty on a refrigerator on the ship, belonging to an unsuspecting Chilean army expeditioner, who is later murdered. Another officer secretly investigating the hoist is left to die in a crevasse accident by one of the robbers, who then both apparently kill themselves in a feud. In a strange twist, the ship's Captain informs Ted that he has been independently sniffing out the events all along. In Ted's eyes, the Captain may either be the one to solve the mystery or may turn out to be the evil mastermind of the theft and the murderer of one of the thieves.

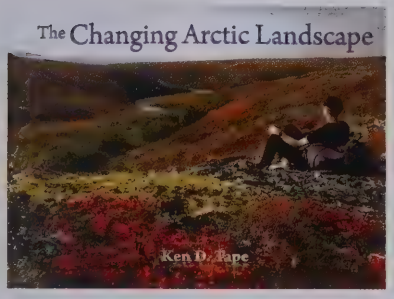
Taken by itself, this book was disappointing, with overly detailed descriptions of mundane scientific affairs and lack of interesting characters, however, Cohen's follow-up book, *Unfinished Business*, briskly picks up the story from *Frozen in Time*. With the action now based in Chile, the stolen loot from the first novel is about to be collected by a pair of behind-the-scene perpetrators, who are in turn murdered by the same captain who killed one of the original thieves. Two sympathetic Chilean Naval investigators, around whom the book is based, now become the new Columbo-like sleuths who know who their culprit is but, but can't get the solid evidence they need to arrest the wily captain for any crimes. This book ramps up the intrigue a quantum leap over the introductory book and is a nail biter from start to finish. It ends all too quickly, leaving us panting for the third part of the trilogy, (not yet published), which we hope will tie the many loose ends together and make sense of the various plots.

Smith is an oceanographer and research scientist who has studied marine communities in extreme environments, including Antarctica. He was chief scientist on twelve Antarctic cruises, including five to Deception Island, and published a 300-page compendium of studies of the island in 2003. *Polar Love* begins with the chief scientist of an Antarctic scientific cruise to Deception Island recovering in hospital from a serious car accident. Flashbacks run through his mind as to how he met the love of his life, Samantha, who was a scientific assistant on the cruise. We are taken on board the expedition ship, cross the Drake Passage to Deception Island and then follow the development of the love story on the ship with their sad parting at the end of the trip.

After two years of life apart, they have a chance encounter, the scientist is seriously injured in a car accident, at which point the novel began. Samantha nurses him back to health and their lives get back on track, with unexpected results. While the book is a sympathetic story of romance, it doesn't advance much from being a detailed trip diary. The wings of passion don't begin to soar until the final few short chapters. The unexpected, brief finale leaves the read-

er merely with jaw agape, rather than with any outpouring of emotions built up over the course of events.

This reviewer gives only the second Cohen book a rave and keeps hoping for exciting, well-written new novels by Antarctic scientists, whether about the passions of love, who-done-its or encounters with aliens, monsters and lost Atlantis sites emerging from the icecaps. ❑



The Changing Arctic Landscape

by Ken D. Tape
ISBN978-1-60223-080-4. $35.00 US.
Cloth, alkaline paper, Bibliography, Index; vii + 56 pp;
Fairbanks AK: University of Alaska Press 2010.

Reviewed by Dave Norton

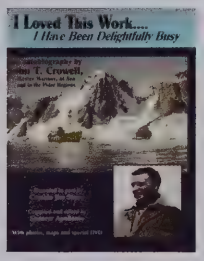
Until this volume appeared, the idea that a book featuring paired photographic images of landscapes could excite anyone would have struck me as farfetched. This author is a young scholar who combines his photographic talents (http://arcticcirclephoto.com/galleries) with being broadly conversant in environmental sciences of several disciplinary specialties. Additionally, he values pioneers' efforts to observe, record and interpret Arctic environments during early and middle years of the twentieth century.

Ken Tape weaves talent, transdisciplinary and transgenerational perspectives into a handsome book. Part of the book's attractiveness is its effective layout, for which the author credits Dixon Jones, the book's designer. Another share of charm is due its spare, clear text. A third share is its balance: Tape's interpretive text avoids the arm-waving that too often infects discussions of global change. On one hand, he illustrates stages by which dangerous positive feedback loops are possibly in play already, such that Arctic icefields are shrinking, and vegetative heights increasing at accelerating rates. On the other hand, he refrains from concluding too much from strictly photographic evidence of change and even points out that some paired images of the same scenes as much as 100 years apart show no change whatsoever.

Publication of this volume coincided with the opening in May 2010 of a six-month-long exhibition at the University of Alaska Museum of the North entitled "Then and Now: The Changing Arctic Landscape." The paired landscape images used in the exhibit are included in the book, but additional interactive images could be manipulated by exhibit visitors. The exhibit and the book mutually influenced one another as to what each presented to a general audience about the dynamics of change taking place in Alaska's Arctic.

Central to the book are 15 paired images that document vegetative and icefield contrasts over decades of time north of tree line in Alaska. One of these pairs is used in additional detail to show that individual boulders have moved downhill over a 50-year span of freeze-thaw cycles (p. 44, Fig. 38). Admittedly, a strictly photogrammetric analysis of landscape changes might sound like a cure for insomnia. The Changing Arctic Landscape, however, contains more than this central core. Recorded and illustrated discussions with pioneers of geological explorations in northern Alaska feature George Gryc (pp. 22-23) Ed Sable (pp. 33-34) and Art Lachenbruch (pp. 46-47) along with interpretive graphics and images of Arctic scenery to round out the contents.

The Changing Arctic Landscape may represent a navigation aid for evolving publishing technologies. Distribution of digitally displayed books (e.g., on Amazon's Kindle, the iPad, etc.) is expected to replace ink-on-paper copy that is not too image-rich in the future. For the time being, however, the quality of imagery required for this detailed analysis of change remains beyond practical reach by digital, and certainly by wireless digital, technology. A combination of this printed book, and a proposed permanent exhibit that can be digitally accessed through the University of Alaska Museum of the North may allow the Museum to share the exhibit without committing scarce space to its presentation. Achieving this objective would also extend the shelf life and marketability of the printed book that serves as an exhibit catalog. ❑



I Loved This Work... I Have Been Delightfully Busy:

An Autobiography by John T. Crowell, Master Mariner, at Sea and in the Polar Regions

compiled and edited by Spencer Apollonio
Stonington, Maine: Penobscot Books, 2010),
163 pages $49.95

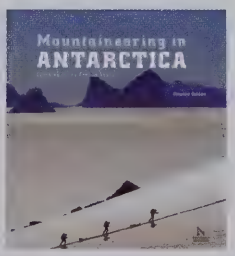
Reviewed by Charles H. Lagerbom

Captain John T. "Jack" Crowell passed away in 1986 at the age of 88. With his passing, the polar community lost one of their more active and accomplished members. Sailor, Cape Horner, Arctic survival specialist, veteran, Antarctic consultant, Arctic advisor to the Air Force, BOWDOIN mate and master, Captain Jack Crowell seems to have done it all. His life has been gloriously recounted in an autobiography entitled "I Loved This Work…I Have Been Delightfully Busy: An Autobiography by John T. Crowell, Master Mariner, at Sea and in the Polar Regions." Based in part on audio recordings that Crowell made with Captain Jim Sharp, the material was compiled and edited by Spencer Apollonio. Both men knew Captain Jack well, with Apollonio having known him for over thirty years.

The book has long been in the works, but the result has made the wait worthwhile. In Crowell's own words and understated way, we are treated to his incredibly exciting and far-flung life. He tells of his early days growing up in the Gloucester fishing community, his WWI heroism when the ship he was serving on got torpedoed, his time on square riggers rounding Cape Horn as well as his accompanying Donald MacMillan and the schooner BOWDOIN on voyages to the Arctic. And that was all before his fortieth birthday! Crowell's life stayed incredibly exciting with his service in WWII as an Arctic survival specialist and his role in helping establish the Crystal II station at Frobisher Bay as well as his postwar stint managing the weather station at Thule Air Base in Greenland. Crowell went on to join the National Science Foundation and helped develop the scientific research vessels EL-TANIN and HERO. He also helped reconnoiter and select the eventual site for the United States' Palmer Station on the Antarctic Peninsula.

With photos, maps and a great DVD that recounts Crowell's thrilling 1937 voyage with MacMillan to the Arctic aboard the GERTRUDE L. THEBAULD, the book is a wonderful account of a tremendous life. A detailed glossary, an informative index and eight separate appendices (one written by his wife Alice) all provide a more complete picture of a phenomenal individual. Jack Crowell's life and times read almost like fiction. But he was very real and Apollonio and Sharp have done a splendid job in bringing his amazing life story to light for the rest of us.

Contact cis@pebscotbaypress.com for more information. ❑



Mountaineering in Antarctica: Climbing in the Frozen South

by Damien Gildea
Published in French as
Les Montangnes de l'Antarctique
(Editions Nevicata, 2010, 192pp, $49.90)

Reviewed by Jeff Rubin

Already the leading chronicler of climbing in Antarctica thanks to his comprehensive 1998 publication, *Antarctic Mountaineering Chronology*, as well as his topographical maps of Livingston Island (2004) and Vinson Massif (2006), Damien Gildea has further secured the title for himself with this magnificent volume.

Along with all the background research he did to compile his *Chronology*, Gildea has led seven expeditions to the continent's high peaks, so he knows the topic as well as anyone. "When I was in Antarctica myself every summer from 2000-01 to 2008-09," he told Explorer's Web.com, "I would meet many climbers who had done something notable and we would talk about things, stuck in the tent at Patriot Hills or Vinson base camp, waiting to fly. Guys like Vern Tejas, Phil Ershler, Dave Hahn and Mike Sharp always had tidbits of information that proved useful, though some things were unprintable."

Gildea also made the effort to look up and interview climbers who had done significant things in Antarctica, among them: Nick Clinch about the 1966 Vinson first ascent; Ed Stump about the Transantarctics; French climbers Erik Decamp and Bernard Virelaude; and Sir Wally Herbert and Sir Chris Bonington.

This book covers the entire continent (the Sentinel and Heritage ranges in the Ellsworth Mountains, the Antarctic Peninsula, the South Shetlands, the South

CONTINUED ON PAGE 26

"Book Reviews" continued from page 25

Orkneys, Queen Maud Land, the Transantarctics, the Framnes Mountains and Marie Byrd Land)—and beyond, including South Georgia, Kerguelen, Heard Island and even Peter I Island and the Balleny Islands. It is also quite current, discussing climbs that took place only in February 2010, just eight months before this book was published.

Gildea writes thoughtfully about the mountains and people's exploits in them. For instance, about the frequent difficulty in ascertaining information about climbs that occurred 50 or 60 years ago in the Peninsula, particularly when the government science programs for which many of the would-be climbers worked discouraged or even forbid recreational forays into the mountains, he says: "If you need to claim to be first on some piece of Antarctica, you should go elsewhere."

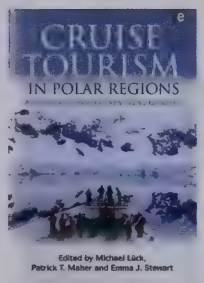
The amount of detail the author has packed into this volume is substantial: names of peaks, climbers, routes, ships and yachts, along with myriad dates and elevations. Even more impressive is the fact that the only error I noted concerns the namesake of what may well be the most-photographed and most picturesque pair of peaks in the world: the striking twin spires of rock and ice at Cape Renard, just north of the Lemaire Channel on the west coast of the Antarctic Peninsula, an area heavily trafficked by tour ships.

Popularly known as Una's Tits, the towers are named for Una Sedgewick, who was among the very last young women that most British expeditioners heading to bases in the Peninsula would see for a couple of years. She served as secretary to the Governor of the Falkland Islands (not, as this book mistakenly says, his wife) in Stanley from 1949-51, beginning when she was about 18 years old. (see John Splettstoeser, "Una Peaks: a long overdue Antarctic geographical naming," in *Polar Record*, April 2009, vol 45, no. 233, p177-9.)

After three failed attempts, the larger of Una's two peaks were successfully summitted by a five-man German team only in 1999, "almost certainly," Gildea says, "the most technically difficult route yet climbed on the Antarctic Peninsula." Despite another group's attempt in 2000, the Germans' success has not been repeated.

Importantly, this book features 200 previously unpublished color photographs—many of them simply stunning—by more than 40 photographers and 12 original and very handsome maps. There are two indices (including a separate one for people's names) but, unfortunately, no bibliography. Boxes cover topics like Vinson Records and Unclimbed Sentinels, and people including Mike Libecki, Naomi Uemura, Lionel Daudet and Skip Novak.

Mountaineering in Antarctica is much more than a splendid and beautifully-illustrated review of past accomplishments, however. It is certain to fire the aspirations of climbers around the world, for it describes the major peaks, routes, traverses and expeditions remaining to be done on the icy continent, not least among them 4480m Mt. Elizabeth, the highest unclimbed mountain in Antarctica. ❑



Cruise Tourism in Polar Regions: Promoting Environmental and Social Sustainability?

Edited by Michel Lűck, Patrick T. Maher, and Emma J. Stewart (Earthscan, 2010, 246pp, $99.95)

Reviewed by John Splettstoesser

Cruise tourism has changed considerably from the time that Lars-Eric Lindblad envisioned a market for it in polar regions, first chartering vessels to carry tourists to Antarctica, then having a purpose-built vessel, Lindblad Explorer, constructed to carry what he considered to be a realistic size with a passenger capacity of just under 100, and also ice-strengthened to maneuver in ice-covered waters. His view of polar tourism emphasized exploration and adventure, plus education. The ship took its first passengers to Antarctica in January 1970, and every year thereafter until it encountered stronger ice than its hull could manage, sinking in Bransfield Strait in November 2007.

For a few years in the 1970s and 1980s there was little competition for the few companies that operated cruises in polar regions, but by the 1980s it was apparent that competition entered the scene. Many books and articles on tourism in polar regions until only a few years ago consisted of published diaries and journals of passengers or staff, along with statistics of numbers of passengers and ships. More recently, the evolution of new terms arose, such as site guidelines, carrying capacity of wildlife sites, cruise-only tourism, guards against introduction of alien species, carbon footprints, and Antarctic Treaty regulations that ultimately apply to all human presence in Antarctica.

The formation of the International Association of Antarctica Tour Operators (IAATO) in 1991 came at a time when the seven tour operators decided that union of a single voice in the industry was better than voicing concerns independently, particularly with a IAATO delegation attending Treaty Consultative Meetings The recognition of IAATO by Antarctic Treaty Parties came slowly, but eventually, as the only practical means by which the industry could be managed in Antarctica. A comparable organization in Arctic tourism (Association of Arctic Expedition Cruise Operators – AECO) performs somewhat the same management practices as does IAATO, but has a different magnitude with respect to numbers of tourists—52,540 visitors (including crews) to Svalbard alone, in 2006, compared with more than 46,000 visitors to Antarctica in the 2007-08 austral summer.

This book represents new views on what has evolved from standard and acceptable tourism operations into what is "the first to deal extensively with what is probably polar tourism's most debatable aspect: the sustainability of tourism." The 23 authors of 14 chapters cover virtually every aspect of the environmental and social sustainability, as stated in the subtitle of the book. Chapters are grouped into four major parts (or Dimensions) – Market, Human, Environmental, and Policy and Governance. Some of the authors' names are familiar as a result of publishing thesis topics they conducted earlier while students.

Varieties of tourism discussed include yacht travel, nuclear-powered icebreakers to the North Pole, vessel size, and means of dealing with safety measures and potential environmental impact of polar cruises. Topics of major concern involve cumulative impacts of tourism, which can take considerable time to assess, especially in wildlife colonies such as penguins; limits on numbers of passengers and ships that might result in environmental impacts of more than a minor or transitory nature; safety in the event of accidents; and a relatively new topic, climate change and implications for cruise tourism.

Overall, this is a very useful book for students and scholars of polar tourism, and will supplement and bring up to date what they might already have in their libraries. Some 25 black-and-white figures and maps, plus tabulations of data help in explaining discussions, and a 10-page index is well organized to locate topics in the text. ❑

Within Our Ranks: Charles Swithinbank

Charles Swithinbank, a renowned scientist whose professional career spans seven decades, has seen more of Antarctica than any living person. He has traveled the world and visited all the continents, spending more time with Russians than any of us when including his time wintering with them in Antarctica and aboard Russian icebreakers, including one that took him to the North Pole.

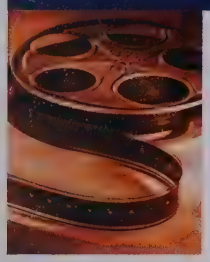
He was born in Burma and eventually moved to the U.K. He experienced fieldwork first as a student, in such places as Iceland and Gambia, and professionally as assistant glaciologist on the Norwegian-British-Swedish expedition, 1949-52. His employment record includes many years with the British Antarctic Survey and Scott Polar Research Institute, as well as the University of Michigan.

His work in Antarctica spans the era of dog-sledging, motor toboggans, R4Ds, LC-130s, single and twin-engine Otters, and helicopters, as well as lots of footwork. His time in the cockpit of a Twin-Otter in Antarctica is record-setting. He has also traveled in style in a Russian version of an RV on a tracked vehicle, with the fancy name Kharkovchanka. In addition to being known for all of these achievements, Charles will also be remembered as the individual who recognized the potential for Antarctica's blue-ice fields to serve as wheeled-aircraft runways.

His medals and awards include the Medal of Merit from King Haakon VII of Norway, Retzius Medal from King Gustav VI of Sweden, and many others.

Charles has six geographic features named for himself in Antarctica, four from the U.S. Board on Geographic Names, and two from the U.K. A statement attributable to Maxim Gorky, Russian dramatist, applies to Charles with respect to his career and achievements: "In the darkness of the polar night, the sun of human intellect now shines brightly." ❑

MOVIE REVIEWS



An Inconvenient Rebuttal: "Cool It" — the Movie

Reviewed by Cliff Bekkedahl

More and more we're finding that the great debates traditionally launched and set for their life span in the printed word are now being "elevated" a step further to the big screen and, ultimately, the DVD. Witness the success and impact of Al Gore's *An Inconvenient Truth*, a quasi-documentary that garnered Gore the Nobel Peace Prize and an equally prestigious Oscar.

Now comes that devil incarnate Bjorn Lomburg, author of the bestseller *Cool It* (reviewed in *The Polar Times*, January 2008) with his own documentary that gently but firmly rebuts the many wild and/or misleading assertions of Gore's cinematic bombshell.

Cool It is currently being shown in only a handful of theaters in New York City and, while receiving very favorable reviews, is likely to recede to obscurity in the flood of December movie releases keyed to the upcoming Oscar season.

One wonders if the appropriate Nobel committee or those responsible for Oscar nominations have had an opportunity to screen *Cool It*?

More importantly, one wonders how many, if any, of our academic/scientific community will deign to address, let alone share, with their students and colleagues the inconvenient, disconcerting and politically incorrect ideas offered by Lomburg in his book and documentary film. This we may never know, but in an era of hope and change, anything can happen. ❑

Polar Movie Classic

"The Red Tent"

Reviewed by Dave Norton

(1969) Franco Cristaldi, producer; primarily in English, some scenes in Russian with English subtitles; jointly produced by Italian and Soviet film companies. Music score by Ennio Morricone. Directed by Mikheil Kalatozishvili. Stars Sean Connery, Peter Finch, Claudia Cardinale and Hardy Krüger. Paramount Pictures' DVD Release (2005) available via web retailers (e.g., Amazon.com, which offered a few new copies from $34 US and used copies starting at $25 as of October 2010). Screen time: 121 minutes.

While the plight of 33 trapped Chilean miners riveted worldwide media coverage for weeks in 2010, their tense wait for rescue recalled momentous polar events of 1928. The dirigible Italia, under the command of Italy's Air Force General Umberto Nobile, dropped from radio contact on 25th May 1928 over sea ice somewhere north of Svalbard. With an international crew aboard, Italia was returning from the second acknowledged attainment of the geographic North Pole by airship. Roald Amundsen had led the first dirigible transit of the Pole in 1926. An anxious world hoped that a wireless SOS would be sent by any surviving airmen, much as we waited, 82 years later, for news of underground survivors of Chile's mineshaft collapse. A ham radio operator in rural USSR finally intercepted a weak signal repeating "S-O-S-N-O-B-I-L-E," nine days after the frost-encrusted Italia had crashed into sea ice and broken apart. Its senders' ordeals were to continue for weeks.

In an odd bit of symmetry, Italians and Soviets released The Red Tent 41 years after the Italia disaster, and 41 years before the Chilean miners' ordeal. About half as many men—16—were aboard the Italia as survived the 2010 mine collapse. The airship's complement included already renowned polar experts of several nationalities. Among the experts were Nobile himself and Dr. Finn Malmgren, a Swedish meteorologist. Both had overflown 90°N with Roald Amundsen. By the time the last of the survivors were plucked from sea ice and returned to Kings Bay (Ny Ålesund) in Svalbard, dozens of aircraft from half a dozen nations, hundreds of ships, and many additional polar experts had been involved. Among the latter were Professor Samoilovich directing Soviet operations aboard the Icebreaker, Krassin, and Roald Amundsen himself (played by Sean Connery) who disappeared in June 1928 while flying from mainland Norway to Svalbard to join international rescue efforts. The ordeal for those rescued from the ice and from the survival tent they had daubed with red dye lasted for 48 days (compared with 69 days endured by miners in 2010).

Those few readers who have already seen The Red Tent in its film, VHS or DVD format need no persuasion of its historical and cinematographic significance. Readers who have not seen this classic ought to treat themselves and friends to the absorbing experience. Never mind that the film was a box office flop four decades ago. American critics acclaimed it as best foreign film in English the year after its U.S. debut (1971). In hindsight, enthusiasts and critics consider the film ahead of its time in pioneering international cinematic collaboration, just as instances of cooperation in 1928 among polar nations were decades ahead of general globalism. The tragedy's occurrence between World Wars I and II drew both attention and disapproval upon adventurers, military operations, and political aspirations of Fascist Italy. Italians coped with Norwegians, Finns, Swedes, Frenchmen, and Soviet Russians, all eager to show off respective national polar superiorities in responding to the Italia crisis. When I screened the VHS version of The Red Tent for an audience of Russian scientists visiting Barrow in the late 1990s, they were awed by this Russian-directed film that had never circulated publicly in the USSR. They surmised that Sean Connery's lead role in the film ran afoul of Soviet wariness lest British MI-5's fictional Agent 007 (James Bond) become a folk hero in the USSR.

By way of assigning proper credit, Italian cinematographic and artistic traditions supply this film with many of its enduring qualities. Italian artists' fierce devotion to historic accuracy is evident in many details. Early scenes in the film feature painstaking recreations of the dirigible Italia, its gondola, and the crew's timing the fall of red dye-filled glass spheres to the ice surface, to determine the airship's altitude. Later in the film, historical accuracy shifts to detailing the various frail and primitive aircraft mobilized for search and rescue, contrasted with the appearance and operation of the sturdy icebreaker Krassin out of Leningrad, USSR. To polar buffs, I commend The Red Tent for this technological accuracy as context for the gripping enormity of polar survival and rescue challenges in 1928.

To cinema connoisseurs less hooked on polar history, I commend this film as a largely overlooked "Spaghetti Western" on sea ice. Clint Eastwood buffs and fans of The Good, the Bad and the Ugly genre of 1960s movies should applaud the distinctive musical score composed by Ennio Morricone combined with historically accurate details of dress, custom and technology—signature qualities of Italy's best film traditions after mid-20th century.

The Georgian-born Soviet director deserves credit for fine-tuning actors' delivery of the film's moral messages. As if adopting practices used in directing operatic performances, his guidance shaped the modest Italian radio technician, Biagi, into an endearing comic hero, while shaping Captain Romagna into an insufferable, spineless military marionette. For Soviet morality messages, Director Kalatozishvili must have coached the actor portraying Prof. Samoilovich to exude soft-spoken competence and unshakable determination consistent with Krassin's effectiveness during her search and rescue efforts. Likewise, the director emphasized the patriotic qualities of Soviet aviator Chukhnovsky, to convey self-effacing and authority-defying courage. The pilot refuses to call for his own rescue following a forced landing on sea ice, so as not to divert Krassin's course from her destination of the ice floe bearing The Red Tent.

Paradoxically, this film's purposeful departures from documented historical realities immortalize it. Such departures allow it to explore troubling unknowns plaguing Nobile's legacies. A fictional nurse, Valeria (Claudia Cardinale), is romanced in Kings Bay by Dr. Finn Malmgren before Italia's departure for the Pole. After the world learns that there are survivors to be found and rescued, she visits Amundsen in Norway, and urges him to join the search for fellow aeronauts. Valeria's character illuminates questions of guilt or innocence in the separate matters of Malmgren's and Amundsen's deaths. Dwarfing these small fictions is the major one of inventing a ghostly re-convening of key participants in the Italia disaster. General Nobile (who in reality lived past his 93rd birthday in 1978) summons the Swedish pilot, Lundborg, nurse Valeria, Dr. Malmgren, Captain Zappi, Captain Romagna, Professor Samoilovich, and Roald Amundsen, to his flat in Rome. There, the sleepless Nobile seeks release from insomnia through their final judgment on his role in history: were his actions in 1928 cowardly or heroic? Irrespective of members' status as living or dead (or fictional) at the time of Nobile's insomnia, this panel struggles to reach a verdict. The historically difficult judgment indeed troubled Italians' consciences for decades, and even today eludes some members of the global community of polar nations. ❑

Polar Sidekicks Earn a Place on the Map

***The New York Times*, 28 September 2010, by John Noble Wilford** — Late by almost a century, cartographic immortality is being accorded the dogs and ponies who bore much of the burden, and in most cases gave their all, in the 1911-12 race between the Norwegian Roald Amundsen and the Englishman Robert Falcon Scott to be the first to reach the South Pole.

Today's map of Antarctica is sprinkled with the names of Scott, Amundsen and other explorers and scientists, affixed to plateaus and valleys, seas and ice shelves. Even their benefactors and other notables, including now-obscure European royalty, are acknowledged. But nowhere is there a tip of the hat to the canine and equine contributions, which historians and polar experts agree were, in the case of the dogs at least, indispensable in early Antarctic discovery.

That is changing, in a modest way, as the result of a United States Air Force colonel's inspired campaign and in anticipation of next year's centennial celebration of the Amundsen-Scott achievements.

Beginning this week, as aircraft resume supply runs in what passes for springtime after the bitter austral winter, aeronautical maps of the primary route used by all air traffic between New Zealand and McMurdo Station in Antarctica will bear names of 11 of Amundsen's sledge dogs and Scott's ponies.

Navigation waypoints on this highway in the sky will honor, among others, Helge, Mylius and Uroa (Greenland dogs of Amundsen's) and Jimmy Pigg, Bones and Nobby (Scott's Manchurian and Siberian ponies). Several of the animals' names have been modified to conform to the standard five-letter format for the waypoints, where at intervals of a few hundred miles pilots must report by radio to air traffic controllers their time of arrival, position and weather conditions.

> *"Everybody I went to said, 'Sounds great, go for it.' "*

On the new map, for example, Helge's name appears in full, but Uroa's becomes Urroa, and Jimmy Pigg is conflated to Jipig. Previously, waypoint names were just a set of letters generated by computers, meaning nothing. An exception, the next to last waypoint near the Antarctic coast, will continue to be designated Byrrd, for Adm. Richard E. Byrd, one of the most famous American explorers of the continent.

Photo courtesy New York Times

Herbert Ponting, British Antarctic Expedition, 1910–1913

Colonel Ronald J. Smith, USAF, now an adviser to the Air Mobility Command at Scott Air Force Base in Illinois, and a former commander of Operation Deep Freeze, conceived of a kind of dog-and-pony show of his own: putting some of their names on the map. Since the names of individual animals were not allowed on the map of the continent itself, the colonel set his sights on the charts he knew so well from flying the Christchurch-McMurdo route over the years.

"Everybody I went to said, 'Sounds great, go for it,' " he said in one of several interviews last week.

Lynne Cox, an American author who is writing a book on Amundsen, helped the colonel compile the names of the 52 dogs that Amundsen started out with on Oct. 19, 1911, identifying the ones that reached the pole and the 11 that survived to the end. While in Norway, Ms. Cox worked with archivists to determine the fate of those that did not and to screen the abbreviated versions of the names to catch any that might be off-color, silly or too similar to other waypoint names on international maps.

Two of the names used, Uroa and Mylius, are for dogs that completed the round trip, on Jan. 25, 1912. Three — Per, Frithjof and Lasse (no kin to the collie of cinematic fame) were killed on the return trek. Helge reached the pole, weak and dying, and so was killed.

Colonel Smith consulted archivists in London for the five pony names for the new map. Besides Jimmy Pigg as Jipig, Snippets becomes Snipt, Bones Boenz, Jehu Jehoo and Nobby Nobey.

Scott's strategy was to rely not just on dogs but also on motorized sledges, ten little horses and manpower — the men themselves pulling sledges. But the motor vehicles failed early in the trek, and the ponies proved unequal to the tasks. They were sacrificed on the way to the pole. For the most part, the five men took up the full burden.

With the centennial near, plans are being made for ceremonies at the bottom of the world, at the American-operated outpost known as the Amundsen-Scott South Pole Station. Cruise ships are laying on special tourist trips into Antarctic waters, and individuals from several nations are petitioning authorities for permission to re-enact the polar treks.

But no dogs are likely to be invited for the occasion. In the 1980s, it was found that they were spreading distemper that proved fatal to indigenous seals. So by international agreement in 1993, dogs have been banned from the icebound continent where they once helped make history. ❑

Photo by Dave Baker

"Long Boards" continued from page 21

arctic Heritage Trust (AHT) or to the Scott Polar Research Institute at Cambridge University. The story in the international press earlier this year about the discovery of the Scotch Whisky under the floor boards at Shackleton's Cape Royd's Hut prompted me to contact Nigel Watson, director of the AHT in Christchurch.

The story of how I managed to physically return the skis is also interesting. Since I will be traveling to New Zealand in January, I thought I would take the skis with me as baggage. However, the skis are 8-1/2 feet long, and I found that none of the airlines, U.S. or Anzac, plying the L.A.-to-Christchurch routes could accommodate objects that long. Another alternative was UPS, but at a cost of $700, that was a non-starter! I was beginning to get desperate when I remembered that our old friend Brian Shoemaker's son-in- law, Brian Stone, worked for NSF in the Polar Regions Division. I made one phone call. "No problem!" In a few days, the skis were on their way. (Thanks, Brians!) ❑

Further note from author: Brian Shoemaker started his polar career in April 1961 when we were both students at the Naval Intelligence School. He was in the audience when I showed a movie I had made while wintering over 1955-1957. Years later he told me that upon hearing my story and watching the movie he made the decision to pursue a career path taking him to Antarctica as often as possible. He applied for Flight School in Pensacola ,became helicopter certified and subsequently served as Officer-in Charge Mcmurdo Sound, Commander of the Aircraft Squadron V X-6 and finally, Commander U.S. Naval Antarctica Support Force.

Obituaries

Igor Zotikov

Igor Zotikov died of cancer on 23 August 2010. He was 83.

Igor's rise from a scientist/engineer in Russia studying missile nose cones and their heating properties on re-entry is not normally a prerequisite for a glaciologist, but after pleading to go to Antarctica when an opening occurred, he became a voice for the subglacial lake known as Lake Vostok. He devised a means of boring through the 4,000 meters of ice sheet at Vostok Station and then penetrating the lake to sample its water and bottom sediments, but he did not live to see it happen.

I am not sure just when I first met Igor but it probably was in the late 1960s, after he had wintered at McMurdo. We were in correspondence about the Ross Ice Shelf Project, and he became an important part of that effort. His little drill was the one that finally got through the ice shelf after the big drill got stuck and could not be freed.

Igor spent many days at my home in Lincoln, Nebraska, and was called Uncle Igor by my kids. He went with us to swimming meets in Nebraska cities and cheered like a real fan of swimming. When we moved to Texas, he became a real Texan, and the first time he left to go back to Moscow, he had on boots, jeans, a bandana and a ten-gallon hat!

My version of Igor's brush with the law involved transporting ice cores from CRREL [in Hanover, N.H.] to Buffalo, New York, to the lab run by Chet Langway. He was stopped by the New York Highway Patrol. He did have a US Army truck and driver's license but when asked for additional ID, all he had was his Russian passport. After a call to CRREL and an okay from the colonel, he was allowed to continue his trip.

The same with his bus trip to Annapolis: When he got off the bus, he was with two young ladies who were college students studying Russian. He walked right past us as he spoke Russian with the girls! On that same trip, when he missed his ride with Bob Dale, he was in the building at 1800 G Street looking for Bob Dale's car. Somehow he got into the Secret Service level in the parking garage. He was wandering around looking for the car when a clean-cut young fellow in a suit and tie asked if he could help him. Igor responded that he was looking for a certain car. When asked if his friend was in the Secret Service, Igor said "I hope not!" He was escorted out of the building. Several years later while I was in Moscow, Igor took me down a street and then turned into a very large and impressive building. As we were about to enter he turned to me and said, "You take me to Secret Service, now I take you to KGB!" (We did not enter the building.)

My last visit with Igor was in St. Petersburg when I was there to participate in the dedication of a new building at St. Petersburg State Technical University, a university for which UTDallas had helped start a School of Management. Igor was in the last days of his candidacy for election to full membership as an Academician, yet he took time to take the night train from Moscow to spend the day with me. He returned by the train that night. The election was held, and it is my understanding that there was a tie vote but, by some election details involving the distribution of votes, Igor was not elected. He was employed at the Institute of Geography for 40 years.

Igor was always enthusiastic, full of ideas, and willing to share his knowledge with all. His many books about his life are on my shelf. I wish they were in English but I have had some read to me by friends who know Russian. His last book (The Antarctic Subglacial Lake Vostok: Glaciology, Biology and Planetology, 2006 - reviewed in *The Polar Times*, Jan. 2007) was written during his Fullbright term at the University of Colorado, written in English and then edited first by me (I gave up quickly) and then by John Splettstoesser, a monumental task but one that was done out of friendship. — Bob Rutford

Thomas W. Bastien

Tom Bastien died 4 July 2010. He was 77.

He served in the US Army from 1952-55, with special training in photography, and was attached to the National Security Agency. He received a BA degree in 1959 from the University of Minnesota. He was hired for a geology project by Cam Craddock in the Jones Mountains, Antarctica, in 1960-61, and the following year 1961-62, was one of four geologists who worked in the pristine Ellsworth Mountains. He returned there in the 1963-64 season for further field work under the direction of Bob Rutford. He received his Master of Science in Geology in 1963.

Leaving his specialty behind, he moved to Santa Fe in 1985, pursuing his passion in American Indian art and culture, owning Indian Trader West, a retail business. In 1990, within weeks of retiring, Tom — an avid bicycling enthusiast — was involved in a hit-and-run accident while bicycling that left him with a severe spinal cord injury, with paralysis of his legs and lower body. Through grueling rehabilitation and with the tenacity Tom was known for, he re-learned to walk, though with difficulty.

His photography was of a professional caliber. One of his photos was on the cover of Science magazine in 1962, a scene of one of the magnificent peaks in the Ellsworth Mountains, an issue that included an article by Tom and others on the geology of the area. Nearby is the Bastien Range, named for Tom and his work there. I was fortunate to have worked with Tom in Antarctica during two seasons, in 1960-61 and 1961-62, sharing a tent for many months, and also his friendship. He is survived by his wife, Willa, three children and 11 grandchildren. — John Splettstoesser

Alf Howard

***The Australian*, 14 August 2010, by Anna Bemrose**—Alf Howard was the last link to the heroic age of Antarctic exploration, an era when men were pushed to extremes with little hope of rescue if anything went wrong. The last surviving member of Douglas Mawson's 1929-31 expedition to the Antarctic, he died peacefully in his sleep in a Brisbane nursing home on July 4, aged 104.

Born on April 30, 1906, Howard grew up in Camberwell, Victoria, and was educated at the University of Melbourne, graduating with an MA in science.

In 1929, while working in the university's chemistry department, he was approached by David Orme Masson to join Mawson's scientific staff as chemist and hydrologist. He accepted immediately and, after an intensive three months training in hydrology at marine institutes in Britain, sailed to Cape Town, where he boarded the coal-fired, three-masted wooden ship Discovery, built in Dundee for Robert Scott's 1901-04 Antarctic expedition.

Uneasy about Norway's increasing interest in east Antarctica, the British government prevailed on Mawson to claim land for the Crown from Enderby

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Land to the Ross Sea, excluding the claims ceded to Australia in 1933.

Much of Howard's work meant standing precariously on the edge of a narrow steel-mesh outboard platform on the port side of the ship, with only a couple of chains separating him from the cold and turbulent seas below.

"His work was a never-ending task. He worked very long hours daily, mainly occupied with the chemical examination of the very numerous seawater samples obtained," Mawson wrote.

"Except in calm weather, the rolling of the vessel rendered difficult the delicate operation involved in the chemical examination of those waters. Howard is therefore to be congratulated upon the extensive series of determinations he ultimately achieved and the unabated enthusiasm and great care with which he prosecuted the task."

At 23, Howard was youngest. Besides Mawson, there was the master of the ship, John King Davis, and the famous photographer Frank Hurley, who developed his film in a small darkroom in Howard's laboratory.

Howard enjoyed reminiscing about his days aboard the Discovery. "I took my skates down to Antarctica with me, though I never mentioned it to the rest of the team. The ice down there was not flat, and there were all sorts of holes in it," he recalled. "In the evenings we would cram into a cabin, light our pipes and listen to gramophone records."

The crow's nest gave opportunities for Howard's interest in gymnastics. "I'd be up there every day. It was the best place to have a good look around and see the big whales: blues, southern rights and humpbacks. You see, it was the heyday of whaling and in the Southern Ocean we were never far from a factory ship; there was always a line-up of whales waiting to be hauled on board.

"The Discovery had 10 feet [3.05m] of solid timber in the bow, so we could barge the ice, but with only six knots she didn't have much power. We had provisions for two years and were very conscious of what happened to Shackleton before us when, on his second last trip, his ship, the Endurance, was trapped in the ice and crushed."

Howard also recalled the moment in January 1931 when he joined Mawson and the other scientists in the motor launch and headed ashore at Commonwealth Bay. Among those aboard with Mawson were two Antarctic veterans, Hurley and the magnetician Alec Kennedy.

As the old hands approached their old living quarters, which they had not seen for 17 years, they saw boots and shattered fragments of wireless masts scattered outside the hut. The only way to enter was from the roof. "We lowered ourselves carefully through a skylight and landed on a carpet of solid ice.

"Conscious that Hurley wanted to photograph inside, we were careful not to touch anything. The ice formations were unbelievable. The old hut was festooned with bulbous, crystal-like stalagmites and stalactites of ice.

"We came across a cubicle tightly filled with snow and hard ice. Only the bunk was ice-free. I recall that it was relatively easy to move around the main living area, though the main entrance was choked with snow and ice. We could just make out some of Hurley's old photographic equipment in the darkroom. It was silent and eerie inside: signs of the 1911-14 expedition were everywhere."

The hut needed to be reinforced, but Discovery lacked spare materials for the task, so the Commonwealth Bay visit became a relaxing stopover.

"It was unusually warm, and we soon began to doff much of our heavy clobber. I remember there were tinned foods, slabs of chocolate and a couple of bottles of Russian stout, which were brought back to the ship and later consumed with relish in the wardroom."

Howard recalled that Mawson was not a very talkative person but if you asked him a question, he would become voluble. He kept a full set of the Encyclopedia Britannica in his cabin and "delighted in quizzing us after supper about various topics."

The expedition proved a success. "We collected an impressive amount of data, considering the limited means at our disposal, and we opened a lot of doors. More importantly, we pointed to areas where research was inadequate or non-existent, such as determining exact Antarctic currents. We showed what still needed to be done."

In 1990, he returned to Antarctica on "The Steps of Mawson" cruise. Howard was a passenger on the first tourist circumnavigation of Antarctica in 1996-97 and, the following year, during a voyage to Mawson and Davis stations, he partied well into the night and essentially propped up the bar with entertaining stories.

In Antarctica he was honoured by Mawson in February 1931 with the naming of a bay between Cape Simpson and Byrd Head, which was christened Howard Bay.

Ed Flowers

Edwin Calvin Flowers, a scientific member of the first wintering-over party in 1957 at the Amundsen-Scott IGY South-Pole Station, died on 2 October 2010 at the age of 83.

After serving in the Navy during World War II, marrying Louise Frantz in 1949, and graduating from Manchester College in Indiana in 1951 with a degree in secondary education, he joined the Weather Bureau in 1951. He studied meteorology in graduate school, and his entire career was as a meteorologist. He was the senior meteorologist during the winter of 1957 at the South Pole and was in charge of the four-man meteorology group at the station.

In his book 90° South, station leader Paul Siple stated that he was not impressed with Ed physically when they first met but soon recognized his amazing strength. This strength was evident when they were working together shoveling snow for the water supply, deep in the snow mine beneath the station. Paul described Ed as a quiet person with ingrained modesty and all-around capabilities and stated that his admiration for Ed grew daily. Paul wrote that Ed "paced his day so that he would be present at the launching of the two balloons normally sent aloft each day. Since these were released twelve hours apart, Ed had a long day."

Ed returned to the South Pole in 1960 and wintered as chief meteorologist and station scientific leader. Flowers Hills in the Sentinel Range, Ellsworth Mountains, is named for him. Two daughters, two grandchildren, and two great grandchildren survive him. — Robert F. Benson

Colin Bull

***Seattle Times*, 8 October 2010, by Sandi Doughton**—Colin Bull grew up at a time when many British schoolboys thrilled to the exploits of polar explorers like Robert Scott and Ernest Shackleton, but few followed in their heroes' footsteps.

For young Colin, the tales of death and survival on the icy fringes of the planet kindled a lifelong passion — and a career in science. His own adventures in the Arctic and Antarctic would rival those of the early explorers he admired, while his studies of glaciers helped shape today's understanding of climate change. Dr. Bull also helped found what is now the Byrd Polar Research Center at Ohio State University and to build its reputation as a leading institution.

In 1986, Dr. Bull and his wife, the artist Gillian Bull, moved to Bainbridge Island, where he chronicled some of his expeditions in two books.

He died Sept. 7 at the age of 82 while on an Alaskan cruise.

Born in Birmingham, England, Dr. Bull first ventured into the Arctic as part of a 1951 university expedition to the island of Spitsbergen, 400 miles north of the Norwegian mainland. The students attempted the passage in a World War II motor launch, but were forced to hitch a ride on a mail boat after inspectors deemed their vessel unseaworthy. Also on the trip was Gillian's brother, who would later introduce the pair.

Dr. Bull spent the next two years on what he called the world's "slowest crossing of Greenland," using seismic, gravity and elevation measurements to estimate the thickness of the ice cap. Those measurements, and others from Antarctica, are a baseline for scientists trying to gauge global warming's impact on the polar regions, said Ohio State University (OSU) glaciologist Lonnie Thompson, Dr. Bull's last graduate student.

After taking a university job in New Zealand, Dr. Bull launched one of the first expeditions to the dry valleys of Antarctica — eerie, ice-free basins where temperatures in the spring and summer range between subzero and shirt sleeves. The theory that the world's continents had once been joined, then drifted apart, was relatively new, and Dr. Bull's measurements of magnetism in the exposed rocks helped verify it, said Peter Webb, a longtime colleague at OSU.

Dr. Bull was also the cook on most expeditions, Webb recalled. That meant trying to transform rock-hard blocks of pemmican— dried, pounded beef— into something palatable. "You'd boil it until it was like a thick soup, and you made it edible by adding curry and all sorts of hot things," Webb said.

Before satellite phones and e-mail, the scientists were isolated for months at a time. When their radio worked, they checked in with the main base every 14 days. "If they didn't hear from you after the second week, they would assume the worst and consider coming to look for you," Webb said. Dr. Bull's ebullient personality and skill as a raconteur kept his colleagues entertained during long, dark stretches crammed together in a tent.

Dr. Bull participated in more than 25 polar expeditions. His studies of the way snow compacts into ice helped later researchers interpret the ice cores that are used to reconstruct past climate, said University of Washington glaciologist Bernard Hallet.

Lured to Ohio in 1961, Dr. Bull recruited top scientists and students. After years battling the Navy's ban on transporting female scientists to Antarctica, he organized the first all-woman expedition. "I've liberated a whole continent for women," he would joke.

Dr. Bull continued to mentor students as he moved up the university ladder, eventually serving as dean of the College of Mathematical and Physical Sciences. Many of his students, including Thompson, are now themselves deans of the field.

In addition to his wife, Dr. Bull is also survived by three children, Nicholas, of Arlington, Va.; Rebecca, of Madison, Wis.; and Andrew, of Bainbridge Island; and four grandchildren. ❑

Membership Chair Message

Greetings! The 2010 membership season is wrapping up, and I would like to thank all who have re-upped with us for another year. We sent out over 400 renewal notices in October, and many of you were very prompt in your replies. Thank you! A big thank you also to all who provided updated contact information such as current email addresses. One way the society is looking to trim costs such as postage is to send out many renewal notices by email. We are exploring this possibility and may attempt this to some degree in the coming year. In preparation for that, we would appreciate hearing from members with new or corrected email information. Please contact me at aps@bluestreakme.com or clagerbom@rsu20.org to update your email information. Those who do not have email or choose not to give out their email will still be contacted through the regular mail system with their renewal notices.

The Membership Center has also been working to ensure that members receive their issues of *The Polar Times* in a timely manner. I thank all of you who have contacted us with delivery issues and/or concerns. Another Membership initiative is the coming opportunity to pay your membership renewals by PayPal. There will be buttons on our soon-to-be-revamped website at some point in the near future that will connect you with PayPal; you will be able to pay your membership, pay for a lifetime membership and/or pay for gift memberships and donations. This feature should be up and running soon, so be on the lookout for it.

It is my pleasure to serve as your American Polar Society Membership Chair. As I enter my eighth year in this position, I would like to thank everyone for making my job an extremely enjoyable one. The many notes and letters that come my way mean a lot, and I am particularly proud that our overall numbers have held steady. I am also excited about our new president's initiatives of recruiting and enlarging our APS membership base. And celebrating *The Polar Times*' 75th year also makes this an exciting time to be in our society. I think that we may be on the threshold of a mini-membership boom much like the one APS saw in the 1960s. So with all of that in mind, I wish you a happy ending to 2010 and an exciting beginning to 2011!

Charles H. Lagerbom

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Antarctic Meeting: Science and the Cultural Arts

Dear Colleague,

I am writing to invite you, as an Antarctic researcher, to consider participating in a unique series of music and cultural arts events that will be held in conjunction with the next Scientific Committee on Antarctic Research (SCAR) Open Science Conference in July 2012 in Portland Oregon. The events will highlight the creative talents of Antarctic scientists who use music, film, art, photography in relaying their research results and science messages to the general public (and to others in the science community).

The theme of the events will be "Antarctic Perspectives — connecting music and the arts to science". The objectives are first to portray Antarctic science results and issues to the general public in a more interesting and understandable way without compromising accuracy and validity, and second to increase the community interactions of scientists and the general public. The uniqueness of the events is that to the extent possible, the scientists will be the performers, artists, and creators of the music and cultural arts portraying their science results. The primary audience for this event will be the general public.

We currently envision an orchestral variety performance, some small ensemble music presentations, an Antarctic photographs/art exhibit, film presentations, and a books display with author discussions.

The music organizers wish to form a SCAR orchestra, and invite the active musicians in the Antarctic research community to participate.

Our science community is rich with talents in music and the cultural arts, and the organizers hope that you might be interested in collaborating with your colleagues in these events. If you wish to learn more and have the possibility of participating please:

1. Send an e-mail to Alan Cooper at CulturalEvent2012@gmail.com with copy to acooper@usgs.gov; and
2. In the e-mail, include your contact information and a brief description of your interests and background in music and/or other cultural arts.

Upon your response, I will send you additional information according to your interests, and will forward your information to the event selection committee that will have members from each of the cultural arts themes.

Please help us reach all Antarctic researchers by forwarding this message to your Antarctic colleagues.

Thank you on behalf of the steering committee for the music and cultural arts events.

Alan Cooper

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About Our Back Cover

Three Nenets boys with their reindeer-leather lassos. ❑ Photo credit: Bill Gasperini — July 2000

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